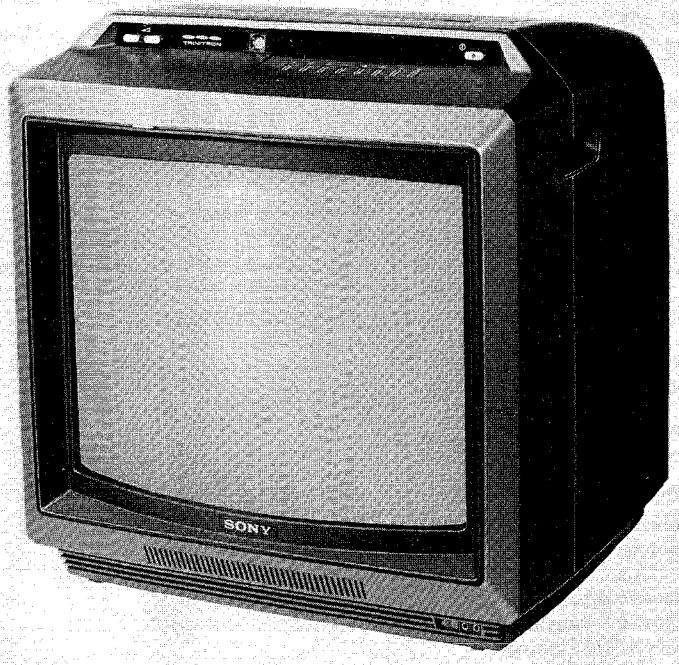
KV-1842E
RM-602

Chassis No. SCC-191A-A



TRINITRON® COLOR TV

WARNUNG !!

UM ELEKTRISCHE SCHLÄGE ZU VERMEIDEN, SOWIE MESSGERÄTE BEI REPARATUREN VOR ZERSTÖRUNG ZU SCHÜTZEN, DARF DAS GERÄT BEI ABGENOMMENER RÜCKWAND NUR ÜBER EINEN ENTSPRECHEND DIMENSIONIERTEN TRENNTRANSFORMATOR BETRIEBEN WERDEN.

SICHERHEITSHINWEIS FÜR KOMPONENTEN !!

DIE IN DEN SCHALTBILDERN, DEN IN EINZELTEILE AUFGELÖSTEN PERSPEKTIVISCHEN ZEICHNUNGEN UND DEN TEILELISTEN SCHRAFFIERT EINGEZEICHNETE UND DURCH DAS ZEICHEN ⚠ GEKENNZEICHNETE KOMPONENTEN SIND FÜR DIE BETRIEBSSICHERHEIT KRITISCH. DIESE KOMPONENTEN SIND DURCH SOLCHE SONY TEILE ZU ERSETZEN, DEREN TEILENUMMERN IN DIESEM HANDBUCH ODER IN VON SONY HERAUSGEGEBENEN ERGÄNZUNGEN ANGEGEBEN SIND.
AUF FÜR DIE BETRIEBSSICHERHEIT KRITISCHE SCHALTUNGSEINSTELLUNGEN WIRD IN DIESEM HANDBUCH HINGEWIESEN.
BEFOLGEN SIE DIESE ANWEISUNGEN STETS, WENN KRITISCHE KOMPONENTEN AUSGEWECHSELT WERDEN ODER VERDACHT AUF FUNKTIONSSTÖRUNGEN BESTEHT.

DIE BESCHLEUNIGUNGSSPANNUNG DARF NICHT ERHÖHT WERDEN, DAMIT KEINE SCHÄDLICHEN RÖNTGENSTRAHLUNGEN ERZEUGT WERDEN. SIE SOLL 25,5 ± 1 kV BETRAGEN.

GEPRÜFT NACH RÖNTGENVERORDNUNG V.1.3.76: ZULASSUNGSSCHEIN NR.: HH/12/78/RÖ.

WARNING!!

TO ELIMINATE SHOCK HAZARD AND PROTECT EQUIPMENT WHEN SERVICING THE SET WITH THE COVERS REMOVED, MAKE SURE THAT THE SET IS PLUGGED INTO A SUITABLY-RATED ISOLATION TRANSFORMER.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SONY®
SERVICE MANUAL

SPECIFICATIONS

Television System: CCIR system B, G and H

Color System: PAL

Picture Tube: 47 cm, 18" (44 cm screen measured diagonally), 90° deflection TRINITRON system

Semiconductors: 52 transistors, 2 FETs, 11 ICs and 66 diodes

Antennas: 75Ω standard antenna socket

Channel Coverage:
VHF channels: E2–4 (Band I)
VHF channels: E5–12 (Band III)
UHF channels: E21–68 (Band IV/V)

Intermediate Frequencies:
Picture i-f carrier: 38.9 MHz
Color subcarrier: 34.47 MHz
Sound i-f carrier: 33.4 MHz

Sound System: 5.5 MHz intercarrier
Output power: 2W (at 10% harmonic distortion)
Speaker: 16 x 5.5 cm (6 3/8 x 2 1/8 inches) oval, 8Ω

Video System: R,G,B cathode drive

Automatic Controls:
ABL (automatic brightness limiter)
ACC (automatic color control)
ACK (automatic color killer)
ADG (automatic degaussing)
AFC (automatic frequency control)
AFT (automatic fine tuning)
AGC (automatic gain control)
ANC (automatic noise canceller)
AVR (automatic voltage regulator)

Anode Voltage: 23.5 kV at zero beam current

Hochspannung: 23.5 kV bei 0 mA Strahlstrom

Power Requirements: 220–240 V ac, 50 Hz

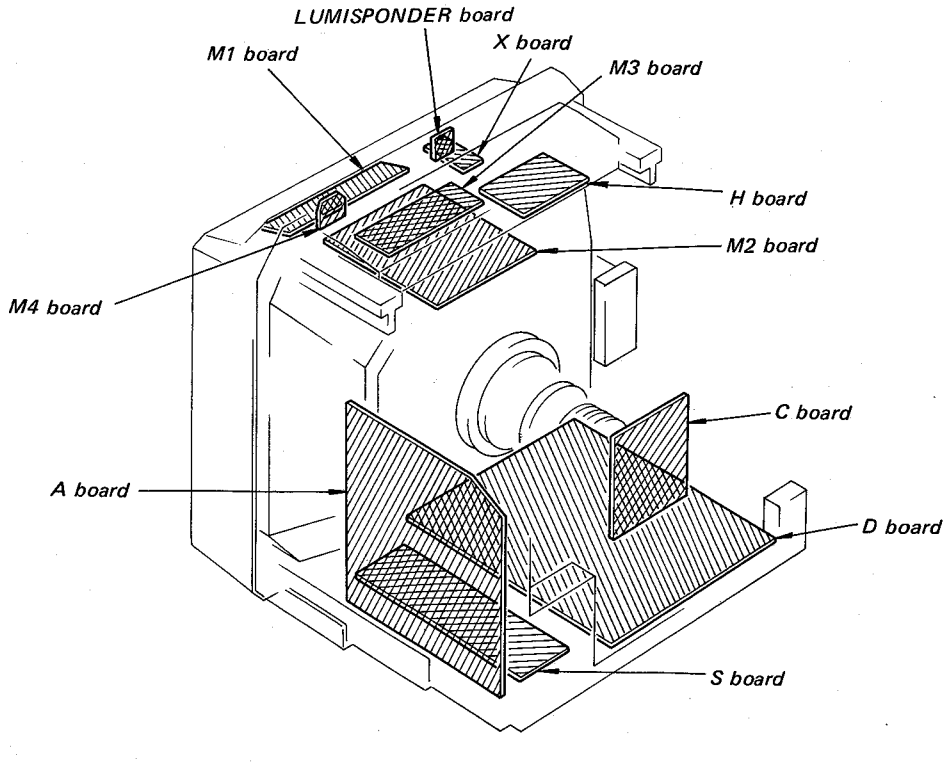
Power Consumption: 70W ac (max)
6W ac (in stand-by condition)

Dimensions: Approx. 468 (w) x 477 (h) x 455 (d) mm
18 3/8 (w) x 18 3/4 (h) x 17 7/8 (d) inches

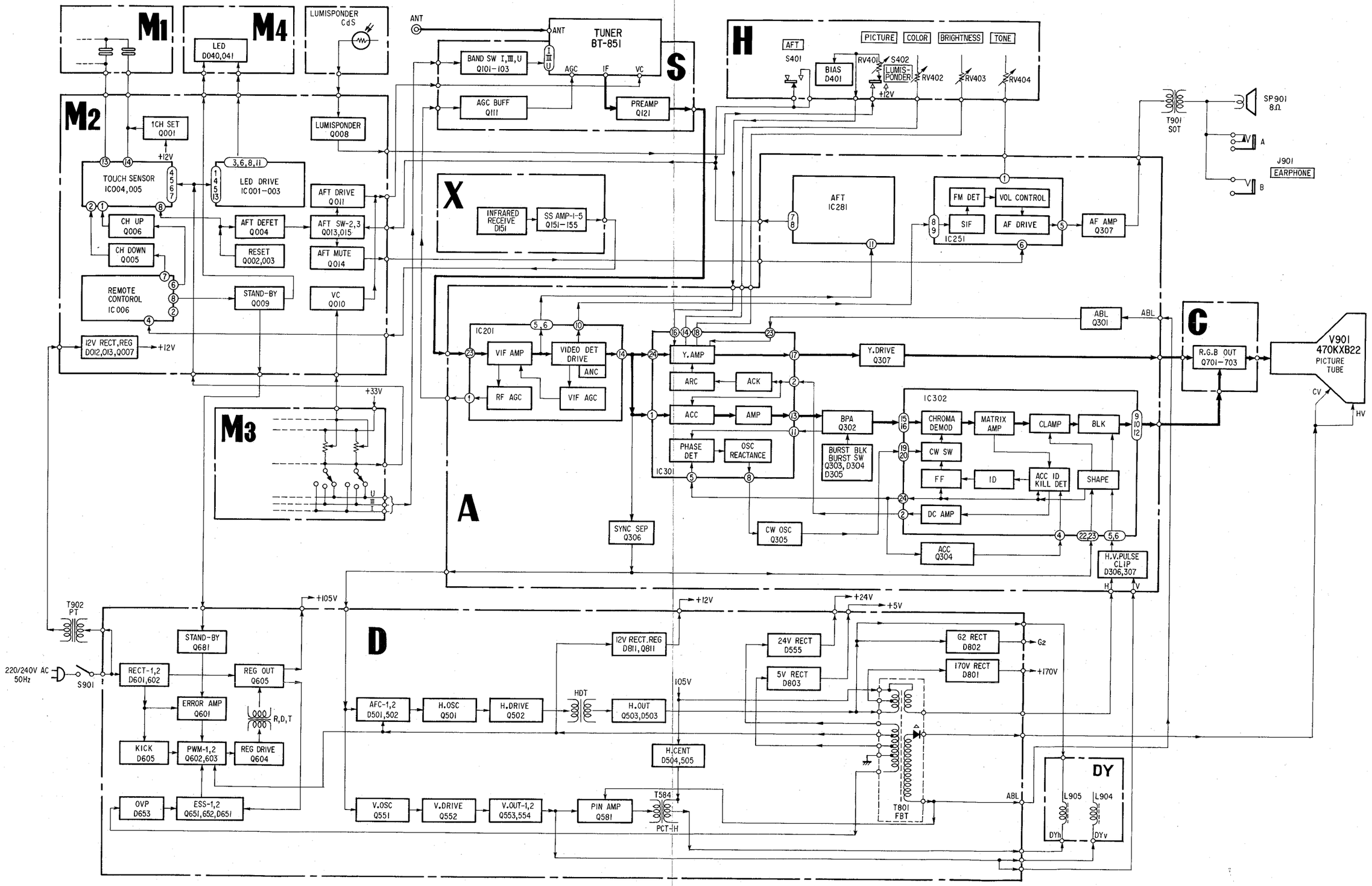
Net Weight: Approx. 23.5 kg, 51lb 13oz

Accessories Supplied: Earphone (ME-20E)
Remote commander (RM-602)
Instruction manual

CIRCUIT BOARDS LOCATION



1-1. BLOCK DIAGRAM



1-2. POWER SUPPLY CIRCUIT

This set uses a choke-coupled flyback converter SMR (Switching Mode Regulator) power supply circuit.

The principal point of this power supply circuit is that the anode side of the bridge rectifier is connected to the B+ line (105V line). Take care not to connect the anode side of bridge rectifier to ground. And this circuit excels the power supply circuit of KV-1822E in efficiency, size and weight. For example, the power consumption of KV-1822E is 100W, and that of KV-1842E is 70W.

Operations of each component according to each period are explained below.

1-2-1. Basic Operations (Figs. 1-1 and 1-2)

1. t0–t1
   A positive bias from T602 (RDT) is applied to the base of Q605 and Q605 is turned on. The current I1 flows in the loop of Q605, L603 and C606, and energy is stored in L603.
2. t1–t2
   The negative bias from T602 is applied to the base of Q605, and Q605 is turned off. So the current I1 suddenly becomes zero, the counter-electromotive force, which intends to prevent the sudden variation of the current I1, appears in L603 due to its self-induction. The current I2 flows in the loop of L603, C621 and D606, and this current charges C621.
3. t2–t3
   Q605 turns on again, and the current I1 flows. The energy of the current I1 is stored in L603 and the energy stored in C621 is supplied to the load.

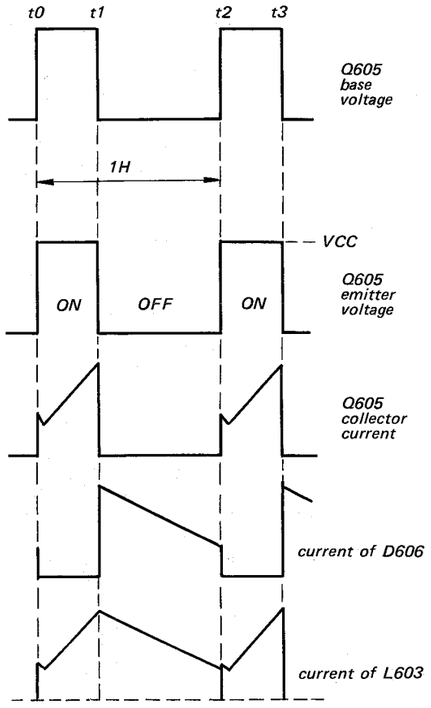


Fig. 1-2

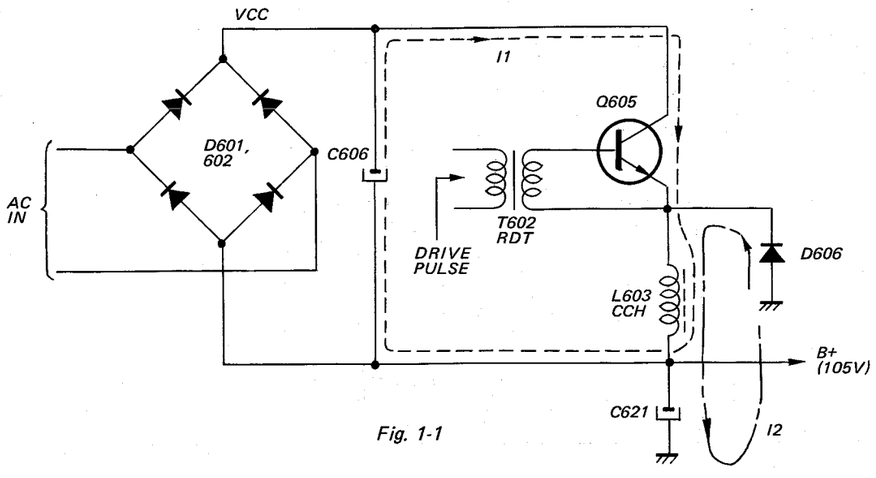


Fig. 1-1

1-2-2. PWM (Pulse Width Modulation) Circuit (Figs. 1-3 and 1-4)

1. The horizontal deflection pulses from T801 (FBT) turn Q602 off (Q603 on).
2. The current from Q601 collector charges C610 for the time-constant of R611 and C610.
3. When C610 is charged up to a certain voltage, Q602 turns on and the charged voltage of C611 flows through Q602. So the negative pulse is applied to the base of Q603, and Q603 turns off.
4. Then the horizontal deflection pulse turns Q602 on again.
5. So, Q602 turns on and off repeatedly.
6. The on-off pulses produced at Q602 are applied to the base of Q605 via Q604 and T602.
7. Q605 turns on and off repeatedly and applies the current to L603.
8. D604 prevents C611 from charging up through R613.

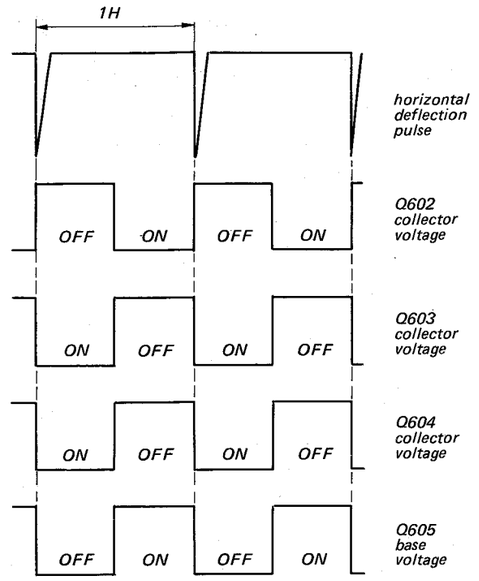


Fig. 1-3

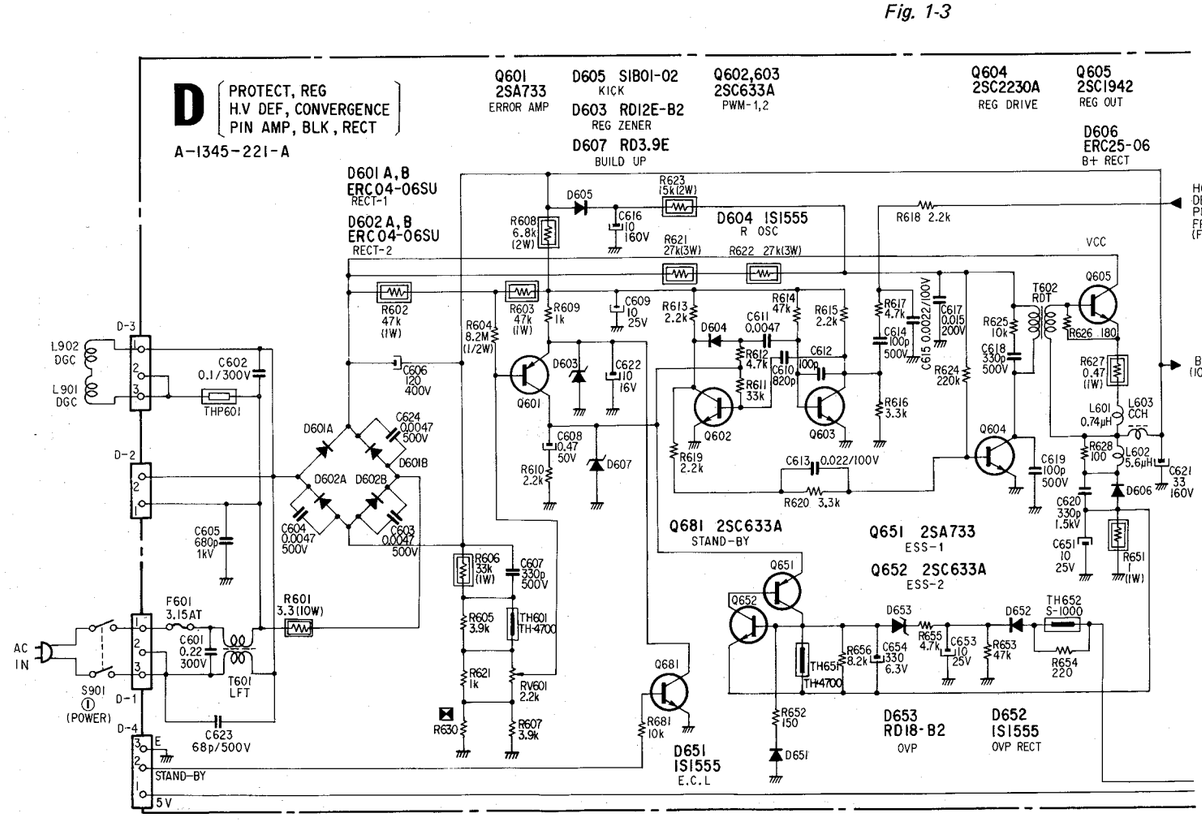


Fig. 1-4

1-2-3. Error Amplifier Circuit (Figs. 1-4 and 1-5)

1. When the B+ line voltage drops, the base voltage of Q601 drops too.
2. The collector voltage of Q601 rises and the Q602-off period becomes short.
3. Q604-on period becomes short and Q605-on period long.
4. So, the energy stored in L603 increases and the voltage on C621 rises.
5. When the B+ line voltage rises, the base voltage of Q601 rises. And the Q605-on period is short, so the voltage on C621 decreases.

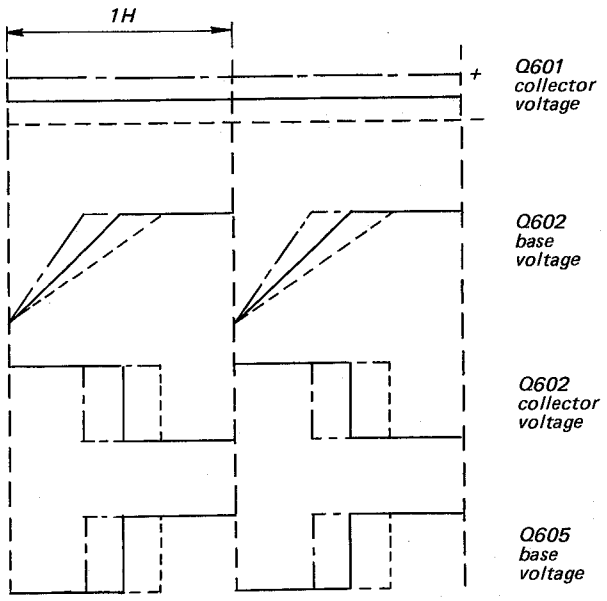


Fig. 1-5

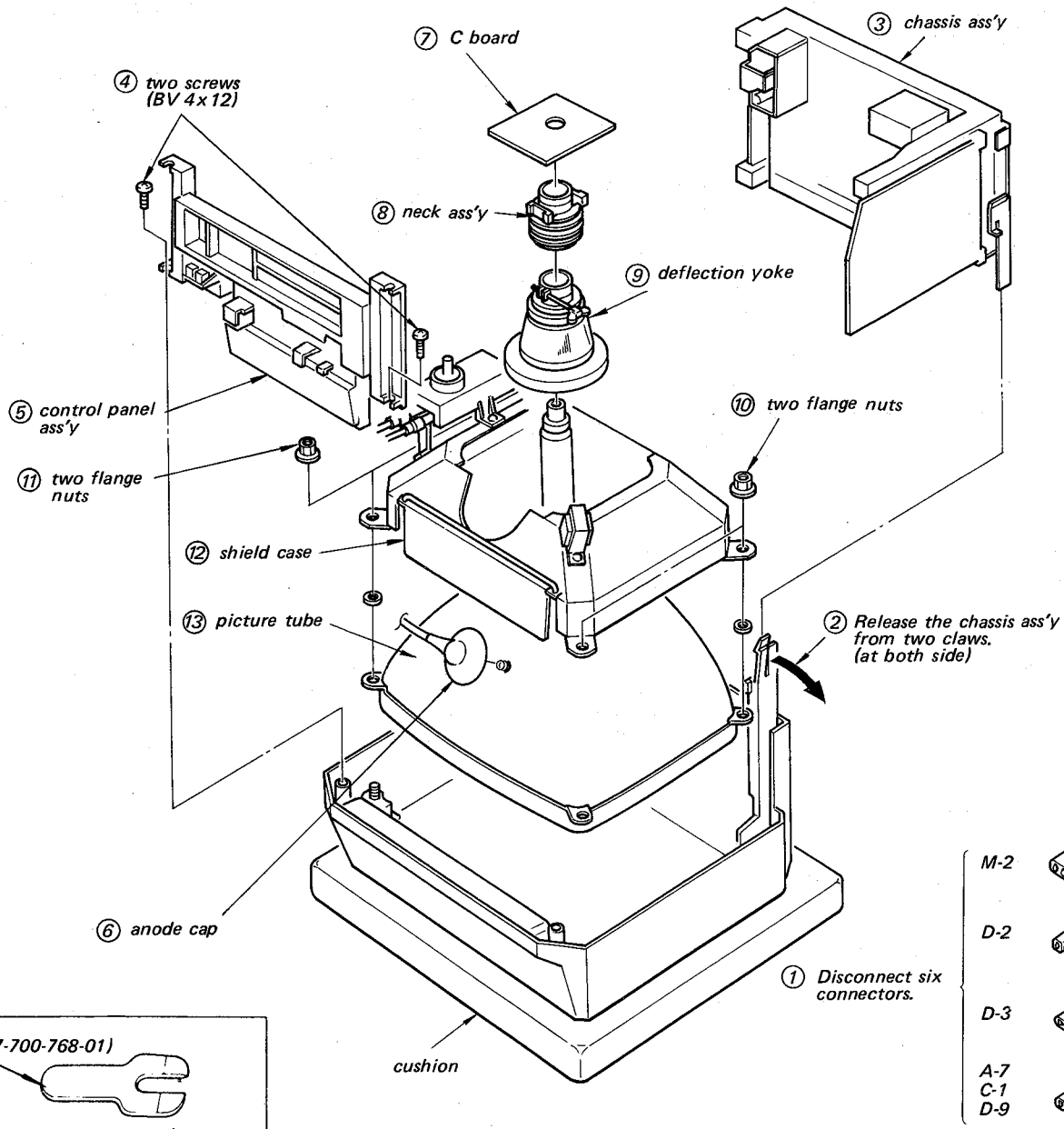
1-2-4. Start of Power Supply Circuit (Fig. 1-4)

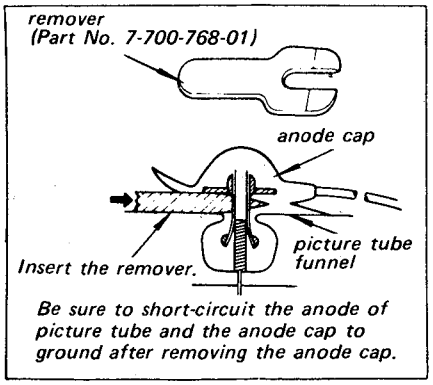
1. When the set is switched on, the voltage rectified by D601 and D602 is applied to Q601 through Q605.
2. Q602 and Q603 become to operate as an astable multiviblator.
3. The on-off pulses produced at Q602 make Q605 on and off repeatedly. So the B+ voltage is applied to the load.
   (Refer to the Basic Operation).
4. The horizontal oscillation circuit becomes to operate.
5. The horizontal deflection pulses from T801 are applied to the base of Q602 and the normal operation of the power supply circuit becomes to start.

SECTION 2
DISASSEMBLY

Note:
- Follow the disassembly procedure in the numerical order given.
- When removing the rear cover, take out all the screws around marked ⇒ on it.
- All screws are Phillips (cross recess) type unless otherwise noted.

2-1. PICTURE TUBE REMOVAL

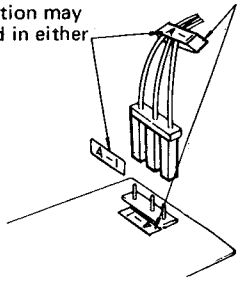




Be sure to short-circuit the anode of picture tube and the anode cap to ground after removing the anode cap.

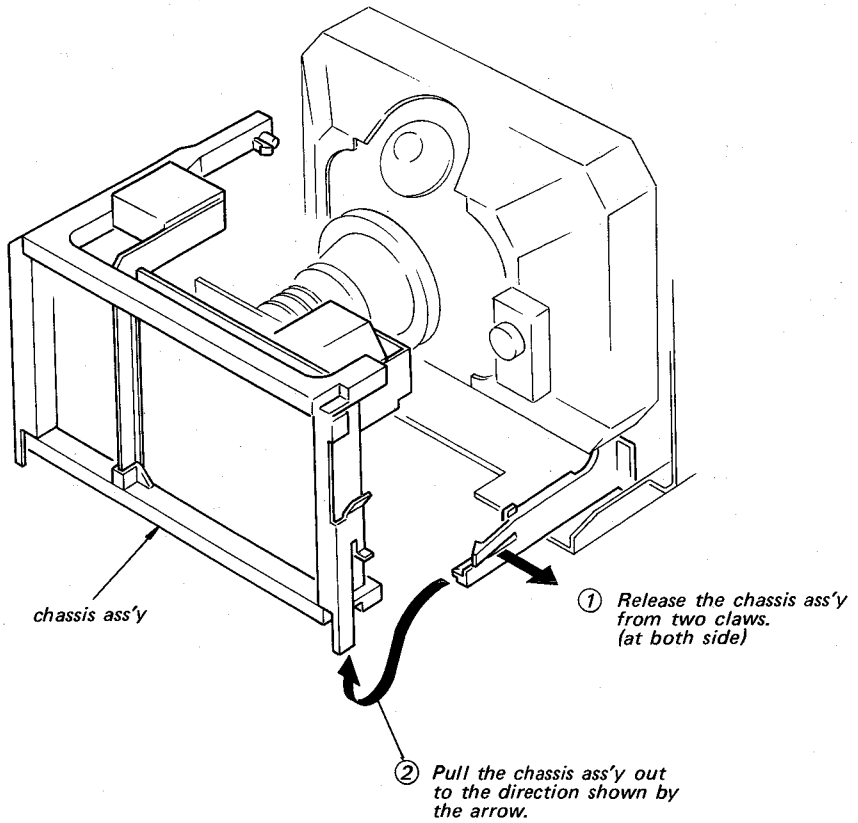
— Note —

Identification may be located in either position.



This set uses connectors for junction between circuit boards. Before plugging them in, check that the number of the plug matches the number of the receptacle as illustrated above.

2-2. CHASSIS ASS'Y REMOVAL


chassis ass'y
① Release the chassis ass'y from two claws. (at both side)
② Pull the chassis ass'y out to the direction shown by the arrow.

SECTION 3
SETUP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switchs should be set as follows unless otherwise noted:

PICTURE control ..... maximum (fully clockwise)
BRIGHTNESS control ..... maximum (fully clockwise)
AFT switch ..... ON
LUMISPONDER switch ..... OFF

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. White Balance

Note: Test Equipment Required.
1. Color-bar/Pattern Generator
2. Degausser

3-1. BEAM LANDING

Preparation:
- Feed in the white pattern.
- Before starting, degauss the entire screen.

1. Loosen deflection yoke screw.
2. Adjust purity control as shown in Fig. 3-1.
3. Slide deflection yoke as far forward as it will go.
4. Position neck ass'y as shown in Fig. 3-2.
5. Disconnect leads ❹ and ❺ on the C board.
6. Adjust purity control to center vertical red band as shown in Fig. 3-3.
7. Slide deflection yoke back for a uniform red screen.
8. Check green and blue rasters for uniformity by performing the same way as steps 5, 6 and 7.
   To get a uniform green screen, connect lead ❹ on the C board and disconnect leads ❸ and ❺.
   To get a uniform blue screen, connect lead ❺ on the C board and disconnect leads ❸ and ❹.
   After these checks, connect the leads ❸, ❹ and ❺.
9. Tighten the deflection yoke screw.
10. Check if mislanding appears at corners a–d as shown in Fig. 3-4. If mislanding is observed, correct it as shown in Fig. 3-4.
11. Confirm that beam landing is correct when the receiver is faced in all directions.

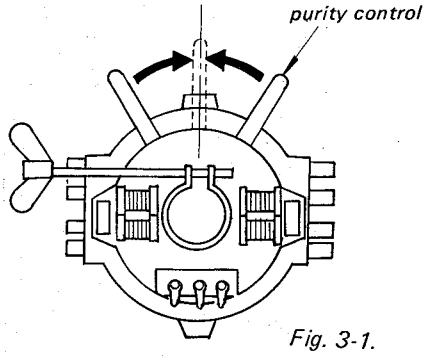


Fig. 3-1.

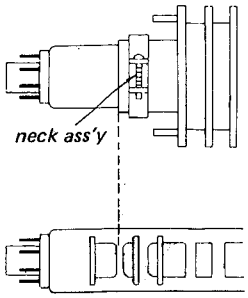


Fig. 3-2.

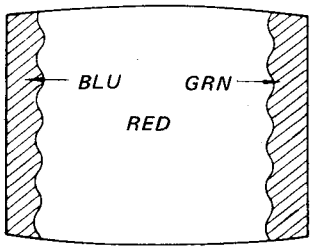


Fig. 3-3.

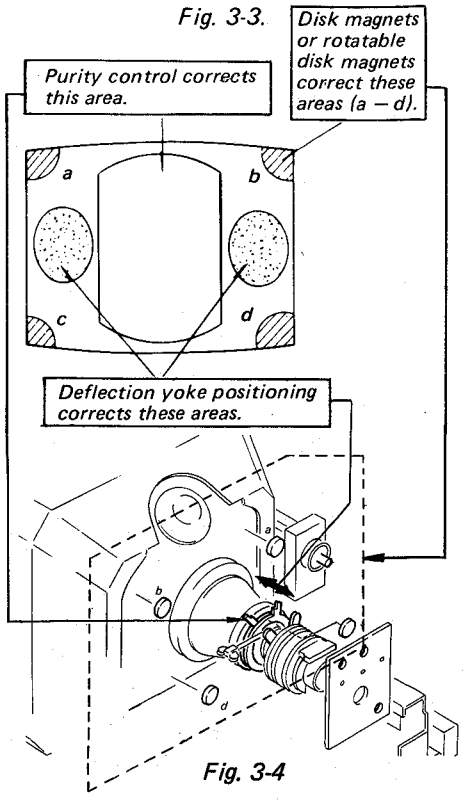
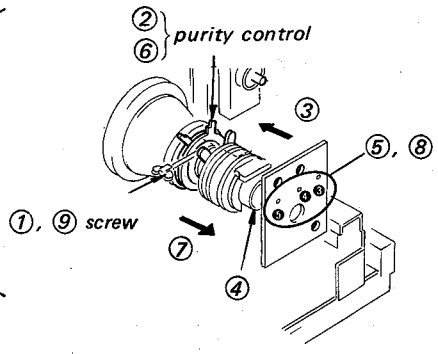


Fig. 3-4



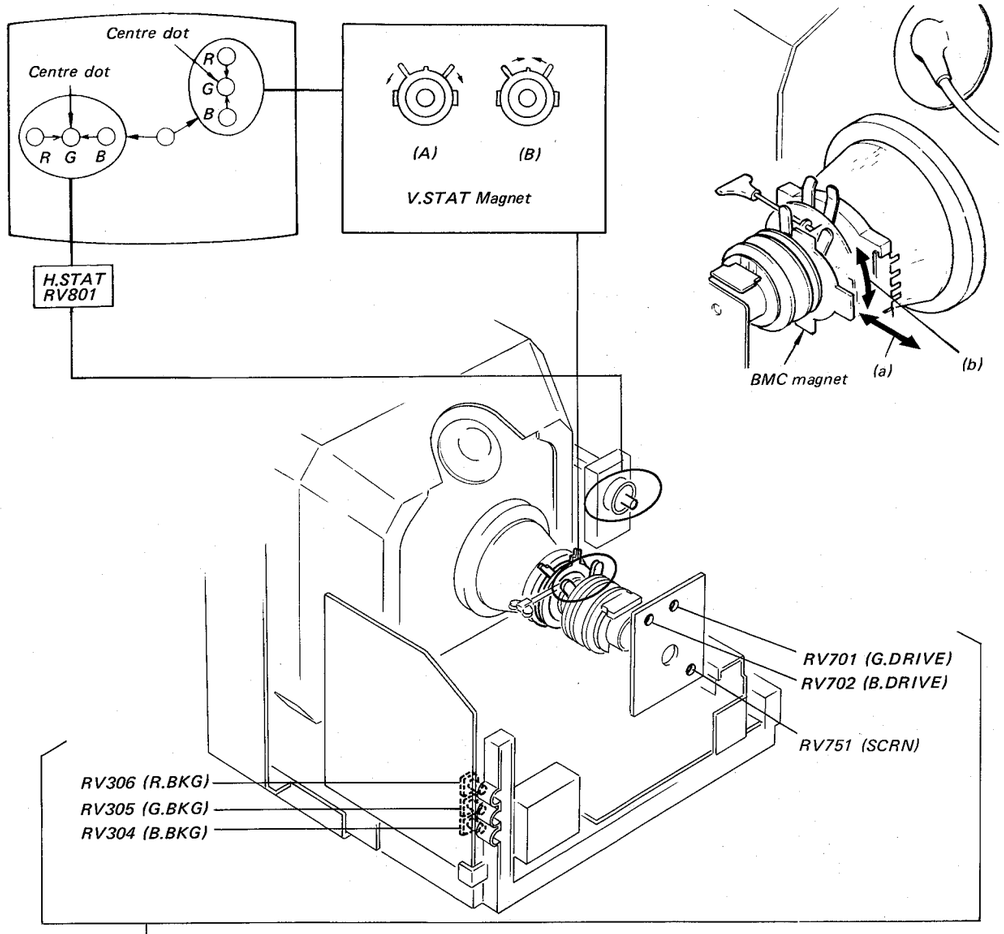
Note: *The circled numbers (① – ⑨) show above steps.*

3-2. CONVERGENCE

Preparation:

- Before starting, perform FOCUS, H.SIZE, V.SIZE AND V.LIN adjustments.
- Set BRIGHT control to fully counterclockwise.
- Feed in the dot pattern.

(1) Horizontal and Vertical Static Convergence



If blue dot does not coincide with red and green dots, perform following steps.

Move BMC magnet (a) to correct insufficient H. static convergence.

Rotate BMC magnet (b) to correct insufficient V. static convergence.

In either case, repeat Beam Landing Adjustment.

3-3. WHITE BALANCE

Feed in the cross-hatch pattern.

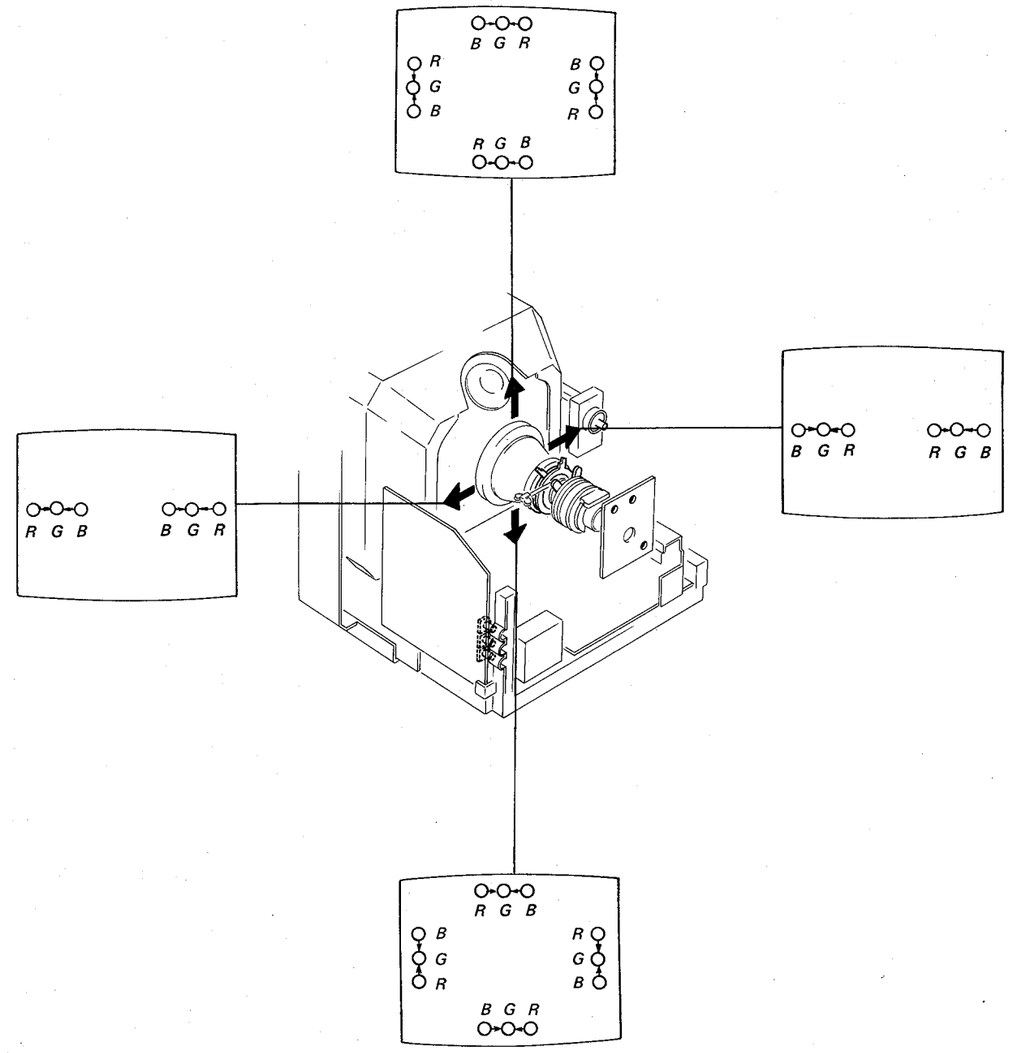
1. Turn PICTURE control fully counterclockwise, and set BRIGHT control to fully counterclockwise.
2. Turn RV701 (G.DRIVE) and RV702 (B.DRIVE) fully clockwise.
3. Set RV304 (B.BKG), RV305 (G.BKG), and RV306 (R.BKG) to mechanical center.
4. Turn RV751 (SCRN) slowly to obtain a faintly visible cross-hatch. Note the color that first becomes visible by turning RV751. Do not turn a BKG control for this color.
5. Adjust the other two BKG controls for best white balance (neutral gray) of the faint cross-hatch.
6. Turn PICTURE and BRIGHT controls fully clockwise. Observe the screen and adjust the DRIVE controls for best white balance.
7. Repeat Steps 1 through 6 several times.

(2) Dynamic Convergence Adjustment

Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.

1. Loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.



SECTION 4
CIRCUIT ADJUSTMENTS

Note: (1) TEST EQUIPMENT REQUIRED

1. Oscilloscope
2. Voltmeter (VOM)
3. Color-bar/pattern generator
4. Variable auto-transformer
5. Isolation transformer

(2) INPUT SIGNAL

When making these adjustments, supply a cross-hatch, a color-bar or an off-air signal.

(3) CONTROL SETTINGS

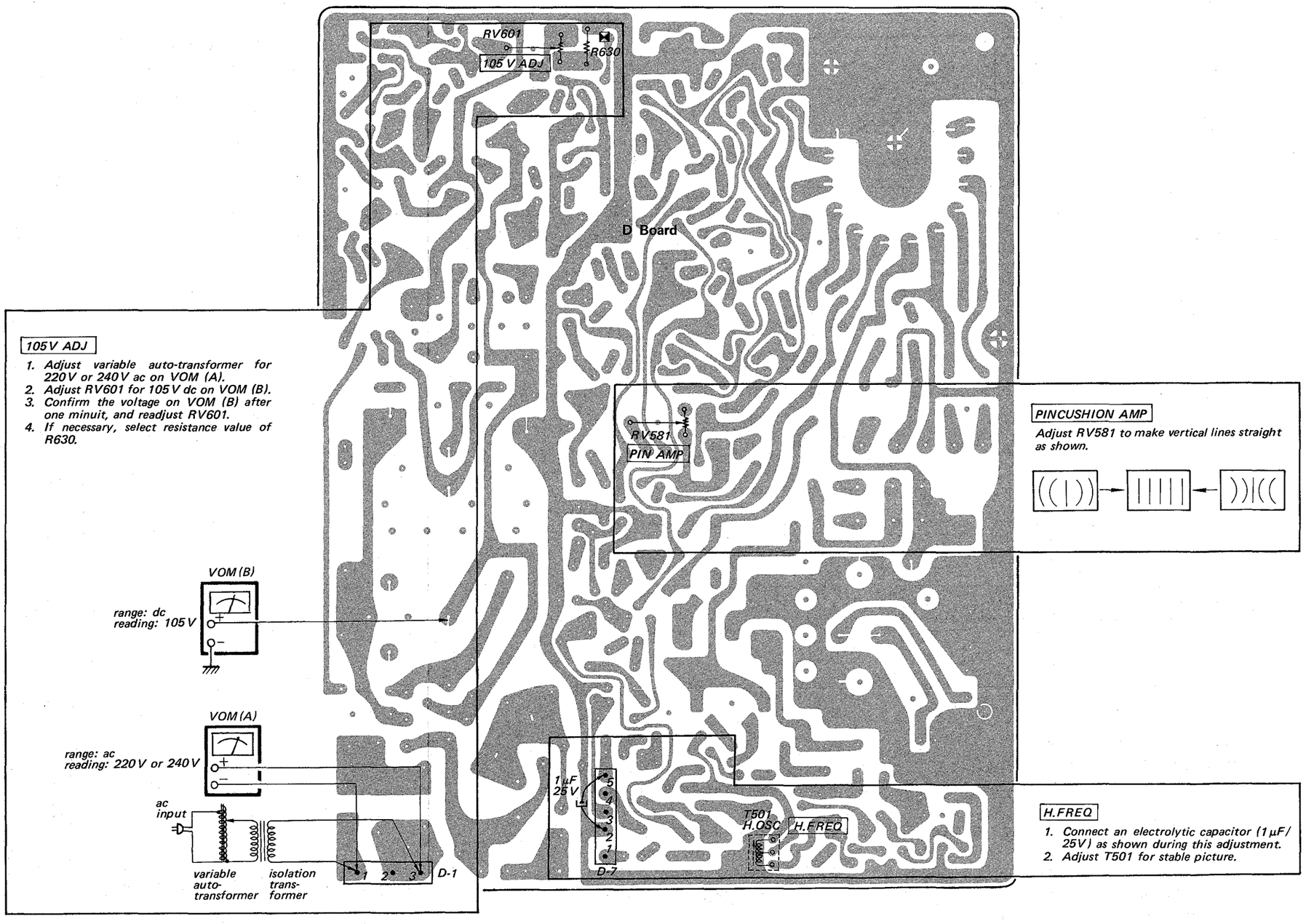
Controls and switch should be set as follows when making checks and adjustments unless otherwise noted.

PICTURE control, BRIGHTNESS control, COLOR control } Set for best picture
AFT switch ..... ON
LUMISPONDER switch .. OFF

(5) CIRCUIT ADJUSTMENTS

Adjustment	Circuit Board	Page
105 V	D	13, 14
PINCUSHION AMP		
H.FREQ		
AFT	A	15, 16
TUNER AGC		
OSC		
4.43 MHz TRAP		
SIF		
CWT		
CW PHASE		
ACC		
DELAY LINE		
FOCUS	C	17

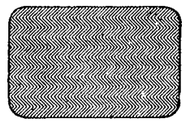
4-1. D BOARD ADJUSTMENTS



4-2. A BOARD ADJUSTMENTS

AFT

1. Tune in an off-air signal.
2. Set AFT switch to OFF (manual operation).
3. Turn tuning knob clockwise to obtain 1.07 MHz beat.
4. Set tuning knob to the point where the 1.07 MHz beat just disappears by slowly turning tuning knob counterclockwise.
5. Set AFT switch to ON. The 1.07 MHz beat will appear or "no color" will occur, if the adjustment is improper.
6. Set T282 to the point where the 1.07 MHz beat just disappears or normal color is obtainable.



TUNER AGC

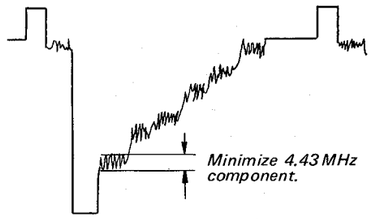
1. Tune in an off-air signal.
2. Adjust RV201 so that snow-noise and cross-modulation just disappear from the picture.

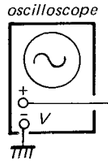
OSC

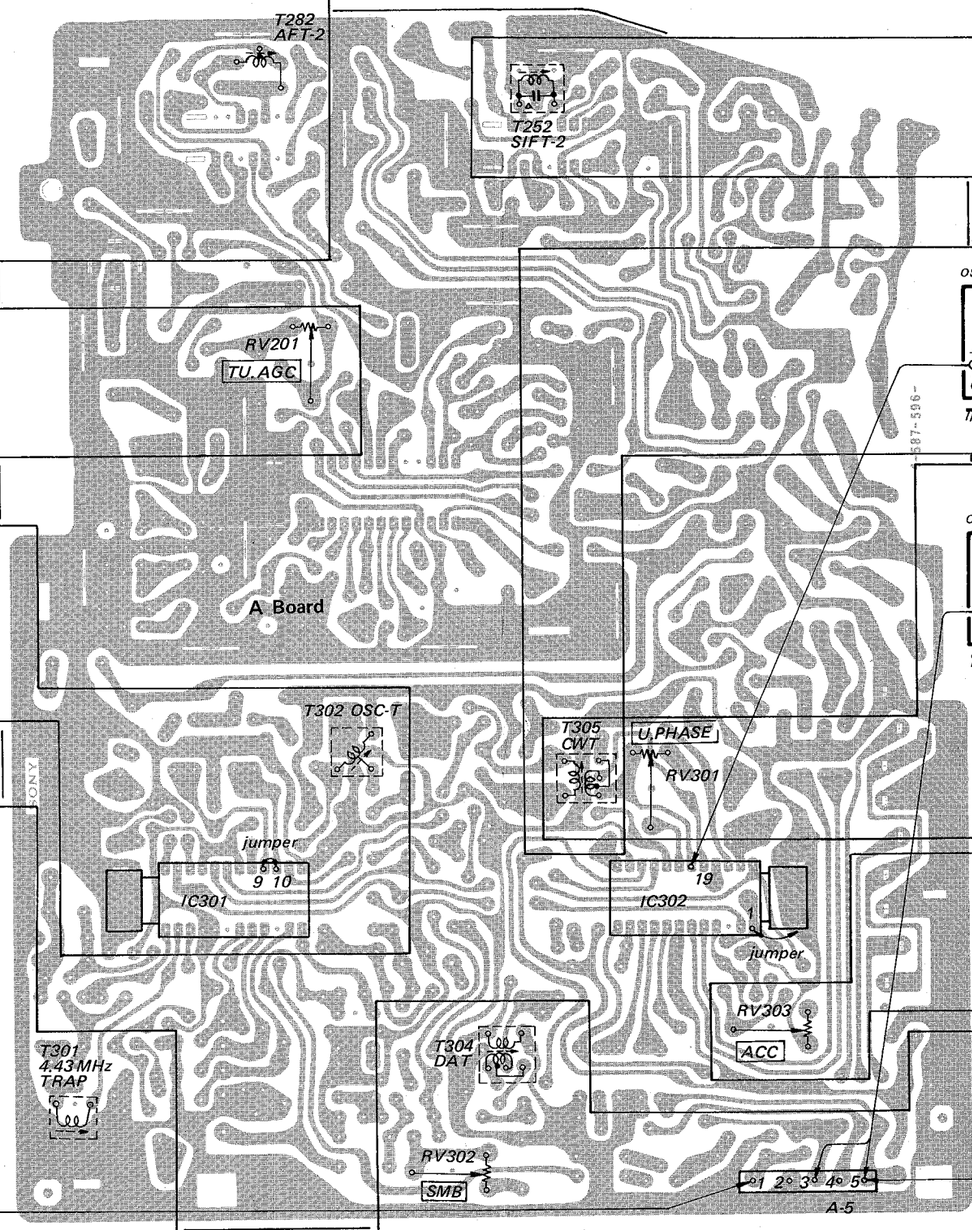
1. Feed in a color-bar signal from color-bar/pattern generator.
2. Short-circuit between the terminals 9 and 10 of IC301 with a jumper during this adjustment.
3. Adjust T302 to synchronize the color picture.

4.43 MHz TRAP

1. Feed in a color-bar signal from color-bar/pattern generator.
2. Set AFT switch to ON and COLOR control to fully counterclockwise and PICTURE control to fully clockwise.
3. Connect an oscilloscope to the terminal 1 of A-5.
4. Adjust T301 to minimize the 4.43 MHz component as shown.





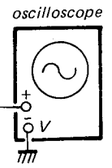


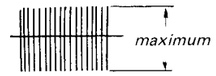
SIF

1. Tune in an off-air signal.
2. Adjust T252 for maximum clear-sound.

CWT

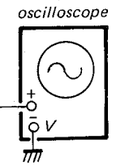
1. Feed in a color-bar signal from color-bar/pattern generator.
2. Adjust T305 for maximum level as shown.

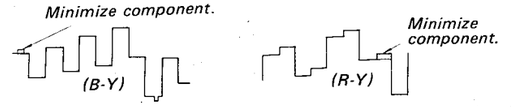




CW PHASE

1. Feed in a color-bar signal from color-bar/pattern generator.
2. Connect an oscilloscope to the terminal 3 of A-5.
3. Adjust T305 to minimize Anti-PAL signal (R-Y) as shown.
4. Connect an oscilloscope to the terminal 5 of A-5.
5. Adjust RV301 to minimize Anti-PAL signal (B-Y) as shown.



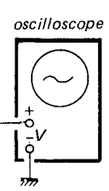


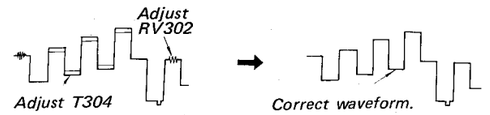
ACC

1. Tune in a strong off-air signal.
2. Set AFT switch to ON.
3. Set COLOR and PICTURE control to mechanical center.
4. Adjust RV303 for suitable color intensity.

DELAY LINE

1. Feed in a color-bar signal from color-bar/pattern generator.
2. Short-circuit the terminal 1 of IC302 to ground with a jumper during this adjustment.
3. Connect an oscilloscope to the terminal 5 of A-5.
4. Adjust RV302 and T304 for correct waveform as shown.

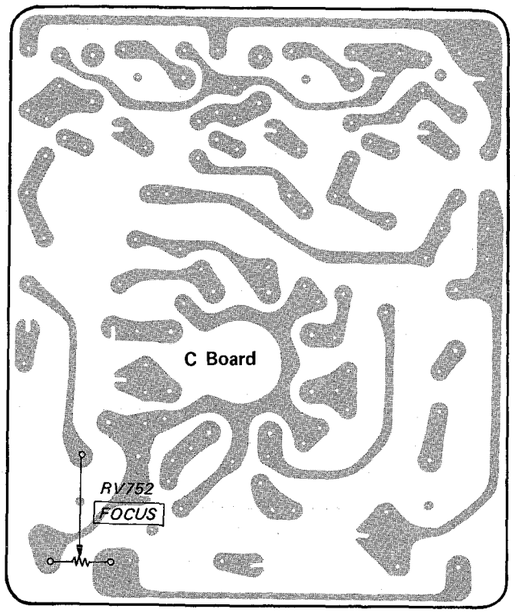




4-3. C BOARD ADJUSTMENT

FOCUS

Adjust RV752 for best FOCUS.



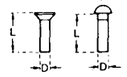
1/4 WATT CARBON RESISTORS Ⓐ

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-244-601-11	10	1-244-625-11	100	1-244-649-11	1.0k	1-244-673-11	10k	1-244-697-11	100k	1-244-721-11	1.0M	1-244-745-11
1.1	1-244-602-11	11	1-244-626-11	110	1-244-650-11	1.1k	1-244-674-11	11k	1-244-698-11	110k	1-244-722-11	1.1M	1-244-746-11
1.2	1-244-603-11	12	1-244-627-11	120	1-244-651-11	1.2k	1-244-675-11	12k	1-244-699-11	120k	1-244-723-11	1.2M	1-244-747-11
1.3	1-244-604-11	13	1-244-628-11	130	1-244-652-11	1.3k	1-244-676-11	13k	1-244-700-11	130k	1-244-724-11	1.3M	1-244-748-11
1.5	1-244-605-11	15	1-244-629-11	150	1-244-653-11	1.5k	1-244-677-11	15k	1-244-701-11	150k	1-244-725-11	1.5M	1-244-749-11
1.6	1-244-606-11	16	1-244-630-11	160	1-244-654-11	1.6k	1-244-678-11	16k	1-244-702-11	160k	1-244-726-11	1.6M	1-244-750-11
1.8	1-244-607-11	18	1-244-631-11	180	1-244-655-11	1.8k	1-244-679-11	18k	1-244-703-11	180k	1-244-737-11	1.8M	1-244-751-11
2.0	1-244-608-11	20	1-244-632-11	200	1-244-656-11	2.0k	1-244-680-11	20k	1-244-704-11	200k	1-244-728-11	2.0M	1-244-752-11
2.2	1-244-609-11	22	1-244-633-11	220	1-244-657-11	2.2k	1-244-681-11	22k	1-244-705-11	220k	1-244-729-11	2.2M	1-244-753-11
2.4	1-244-610-11	24	1-244-634-11	240	1-244-658-11	2.4k	1-244-682-11	24k	1-244-706-11	240k	1-244-730-11	2.4M	1-244-754-11
2.7	1-244-611-11	27	1-244-635-11	270	1-244-659-11	2.7k	1-244-683-11	27k	1-244-707-11	270k	1-244-731-11	2.7M	1-244-755-11
3.0	1-244-612-11	30	1-244-636-11	300	1-244-660-11	3.0k	1-244-684-11	30k	1-244-708-11	300k	1-244-732-11	3.0M	1-244-756-11
3.3	1-244-613-11	33	1-244-637-11	330	1-244-661-11	3.3k	1-244-685-11	33k	1-244-709-11	330k	1-244-733-11	3.3M	1-244-757-11
3.6	1-244-614-11	36	1-244-638-11	360	1-244-662-11	3.6k	1-244-686-11	36k	1-244-710-11	360k	1-244-734-11	3.6M	1-244-758-11
3.9	1-244-615-11	39	1-244-639-11	390	1-244-663-11	3.9k	1-244-687-11	39k	1-244-711-11	390k	1-244-735-11	3.9M	1-244-759-11
4.3	1-244-616-11	43	1-244-640-11	430	1-244-664-11	4.3k	1-244-688-11	43k	1-244-712-11	430k	1-244-736-11	4.3M	1-244-760-11
4.7	1-244-617-11	47	1-244-641-11	470	1-244-665-11	4.7k	1-244-689-11	47k	1-244-713-11	470k	1-244-737-11	4.7M	1-244-761-11
5.1	1-244-618-11	51	1-244-642-11	510	1-244-666-11	5.1k	1-244-690-11	51k	1-244-714-11	510k	1-244-738-11	5.1M	1-244-762-11
5.6	1-244-619-11	56	1-244-643-11	560	1-244-667-11	5.6k	1-244-691-11	56k	1-244-715-11	560k	1-244-739-11		
6.2	1-244-620-11	62	1-244-644 11	620	1-244-668-11	6.2k	1-244-692-11	62k	1-244-716-11	620k	1-244-740-11		
6.8	1-244-621-11	68	1-244-645-11	680	1-244-669-11	6.8k	1-244-693-11	68k	1-244-717-11	680k	1-244-741-11		
7.5	1-244-622-11	75	1-244-646-11	750	1-244-670-11	7.5k	1-244-694-11	75k	1-244-718-11	750k	1-244-742-11		
8.2	1-244-623-11	82	1-244-647-11	820	1-244-671-11	8.2k	1-244-695-11	82k	1-244-719-11	820k	1-244-743-11		
9.1	1-244-624-11	91	1-244-648-11	910	1-244-672-11	9.1k	1-244-696-11	91k	1-244-720-11	910k	1-244-744-11		

HARDWARE NOMENCLATURE

Screw:

P 3 x 10
- *L: Length in mm*
- *D: Diameter in mm*
- *Type of head*
- *Indicated slotted-head only. Unless otherwise indicated, it means cross-recessed head (Phillips type).*



Nut, Washer, Retaining ring:

N 3
- *Diameter of usable screw or shaft*
- *Reference designation*

Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		*flat-fillister-head screw*	
RF		fillister-head screw	
BV		braizer-head screw	

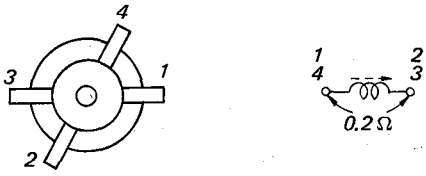
Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

SECTION 5
DIAGRAMS

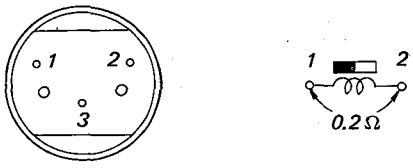
5-1. DC RESISTANCE AND WINDING DIAGRAMS OF COILS AND TRANSFORMERS

L502 (DCC)

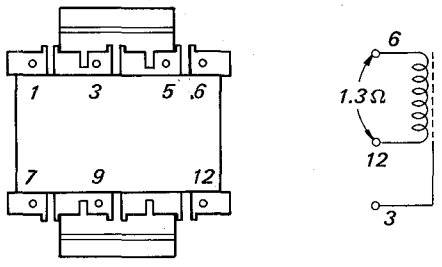
L503 (HWC)



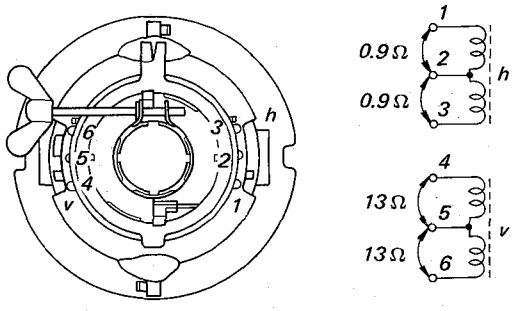
L504 (HLC)



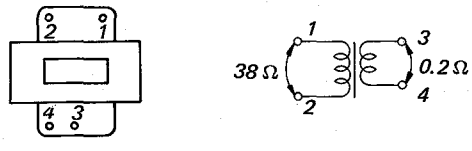
L603 (CCH)



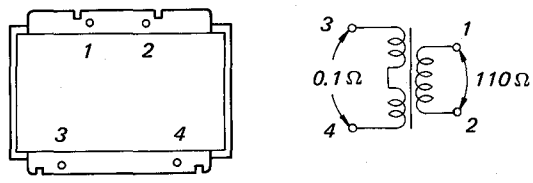
L903 (DY)



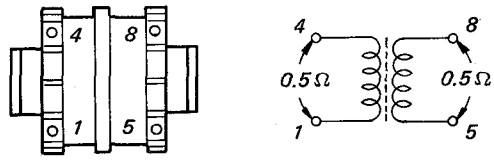
T502 (HDT)



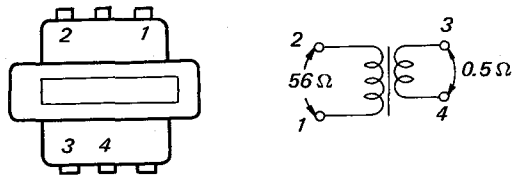
T581 (PCT-H)



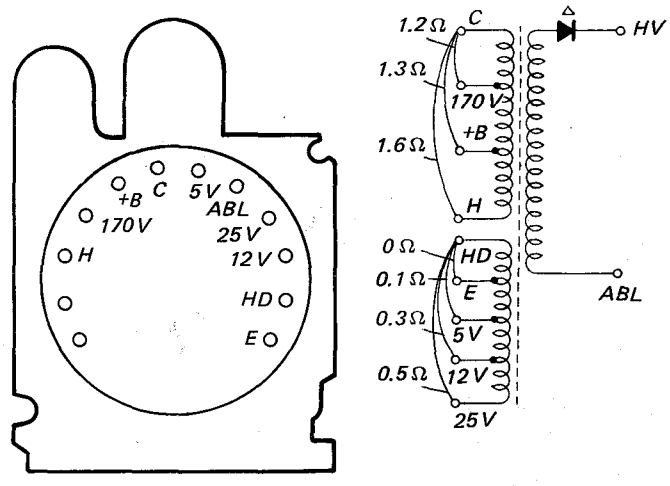
T601 (LFT)



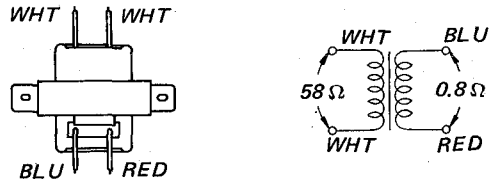
T602 (RDT)



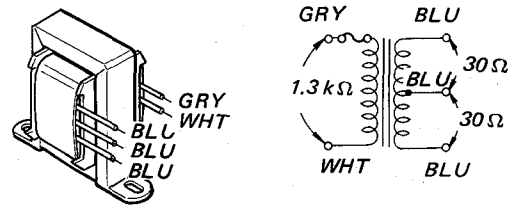
T801 (FBT)



T901 (SOT)



T902 (PT)



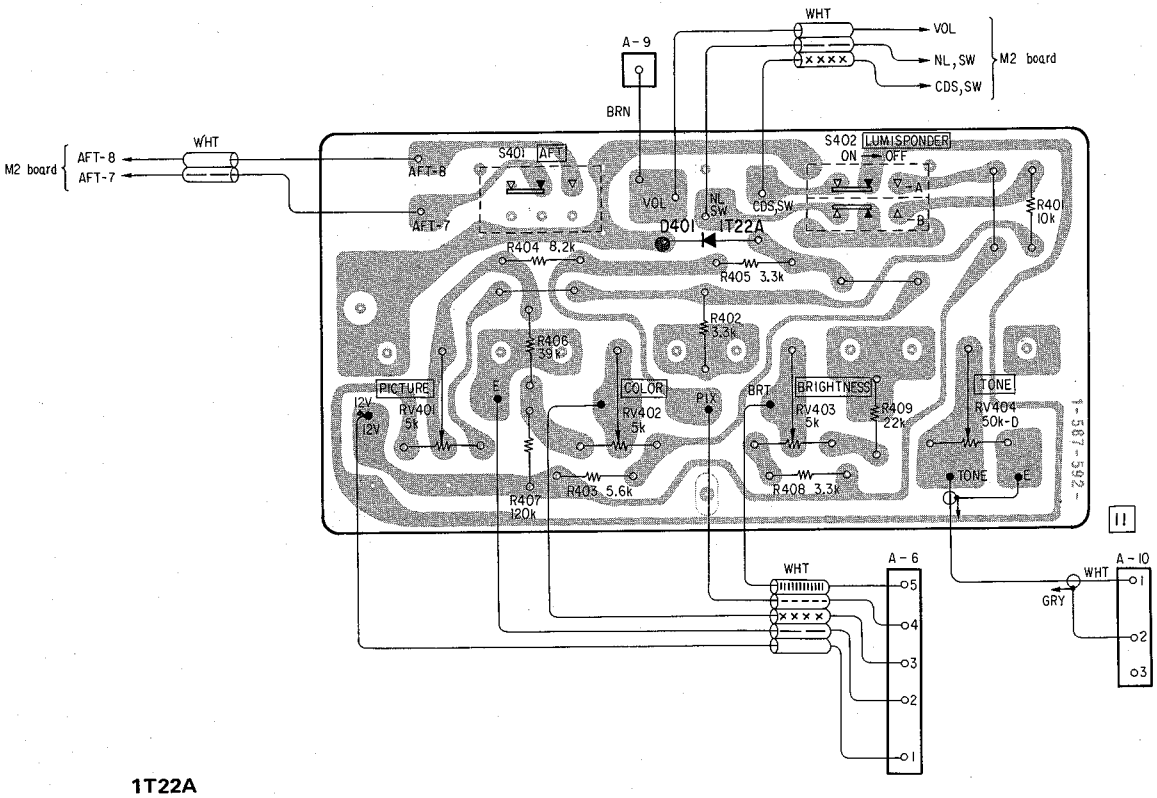
Note: DC resistance measurements shown with coils disconnected from circuit.

H [CUSTOMER CONTROL] **X** [INFRARED RECEIVE SS AMP]

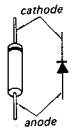
5-2. MOUNTING DIAGRAMS

– Conductor Side –

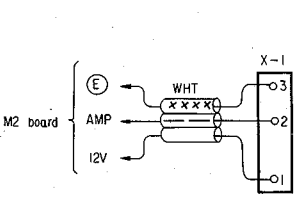
– H Board –



1T22A

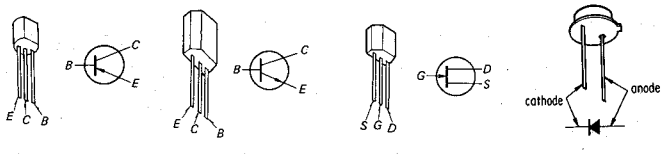


– X Board –



A-1285-020-A

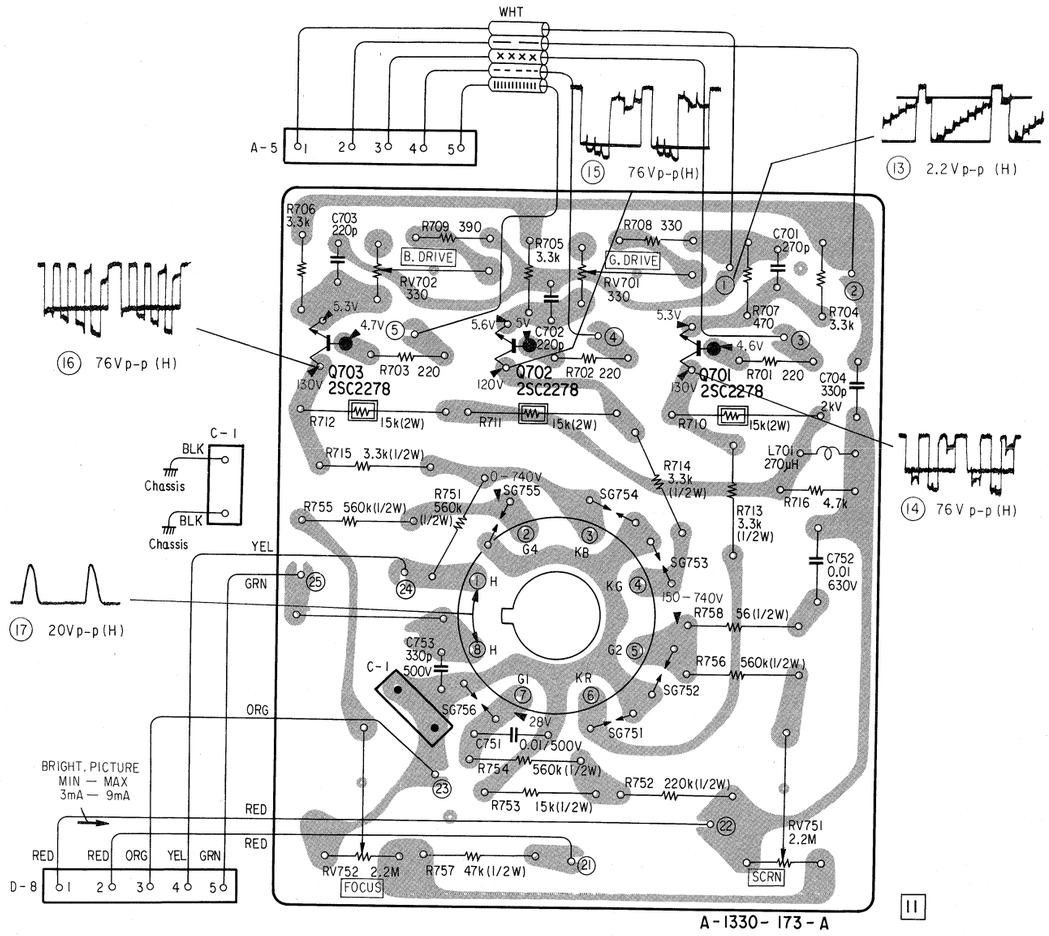
2SA733 **2SC633A** **2SK23A** **1T30**



Note: • ○— : parts extracted from the component side.
• ●— : parts extracted from the conductor side.
• Voltages in ( ) are taken with RM602 operated.

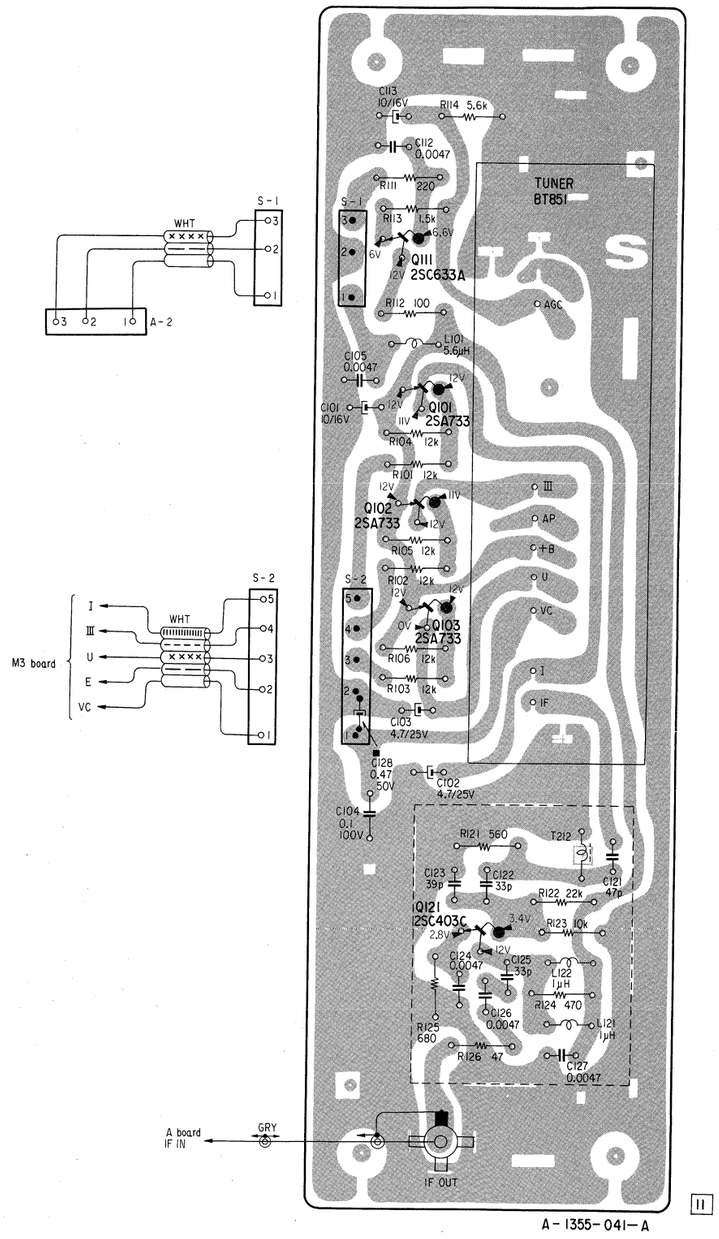
[RGB OUT] C S [PREAMP, AGC BAND SW]

— C Board —



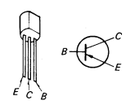
Note: ● ○— : parts extracted from the component side.
● ●— : parts extracted from the conductor side.

— S Board —

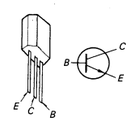


Note: ● ○— : parts extracted from the component side.
● ●— : parts extracted from the conductor side.
● ■ : part mounted on the conductor side.

2SA733



2SC403C
2SC633A



Note: ● ○— : parts extracted from the component side.
● —● : parts extracted from the conductor side.
● Voltages are taken with the set selected to CH-1.

– M1, M2, M3, M4 and LUMISPONDER Boards –

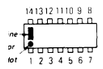
M4 [LED] **M3** [CH SELECT]

M2 [LED DRIVE REMOTE CONTROL RECEIVER AFT] **M1** [TOUCH SWITCH]

µPB7400C

µPB7440C

CX755



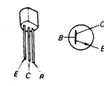
M51231P

SN713A

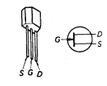
2SA733

2SC633A

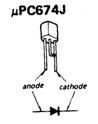
2SC1475



2SK23A



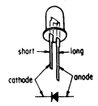
µPC674J

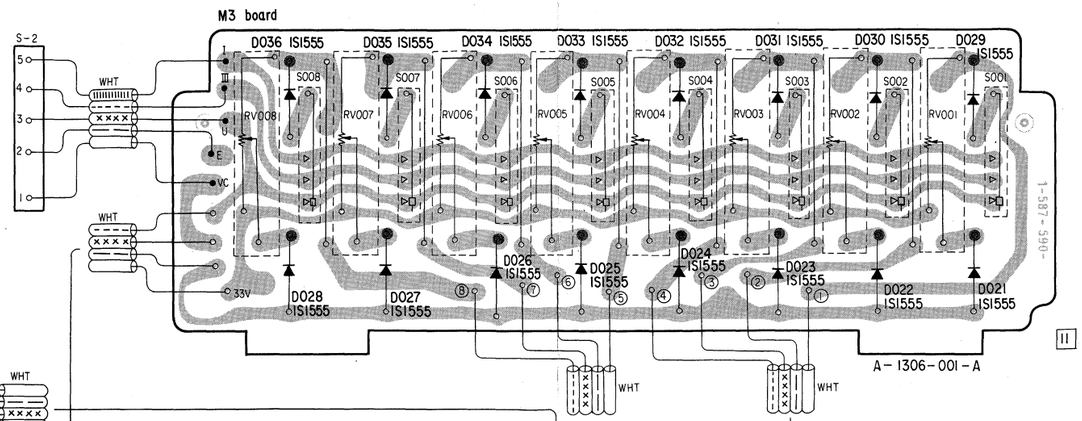


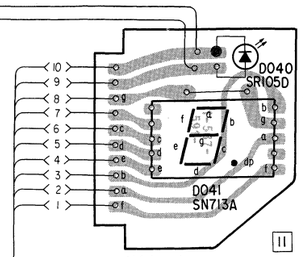
1S1555
RD6.8E-B

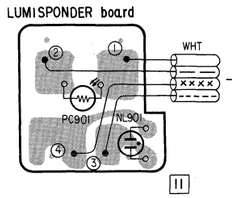
EQA01-12S
SIB01-02

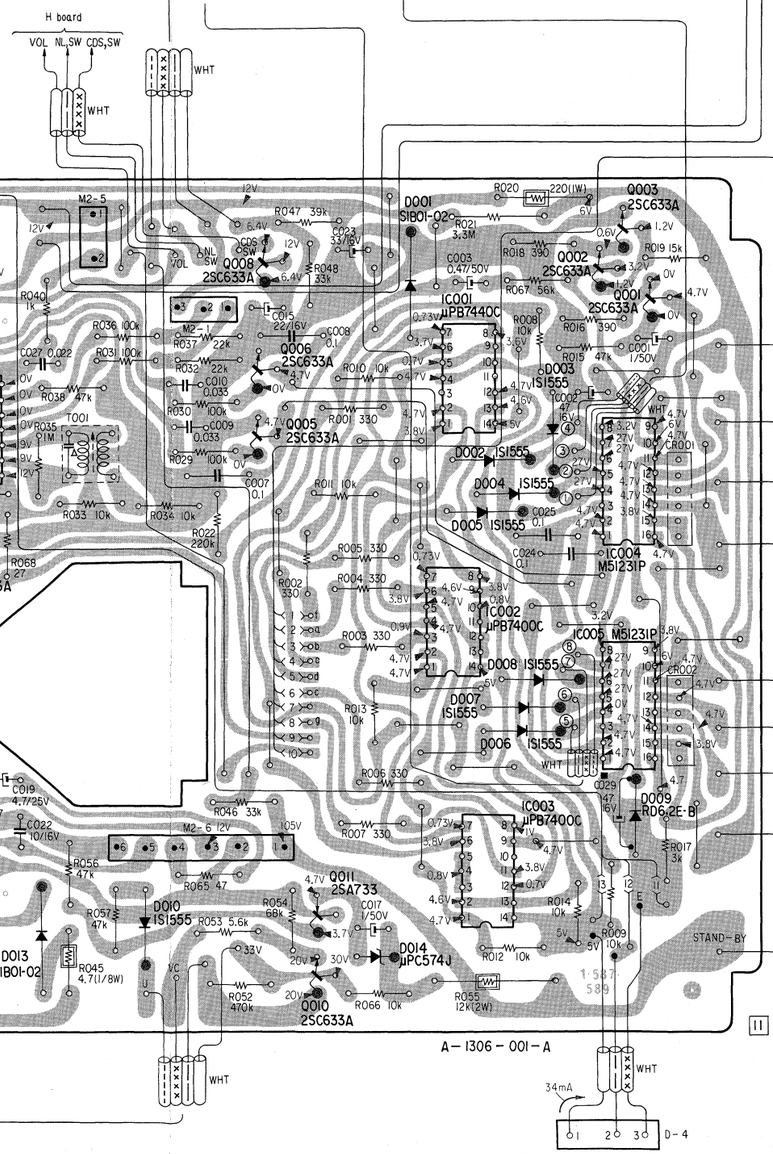
SR105D

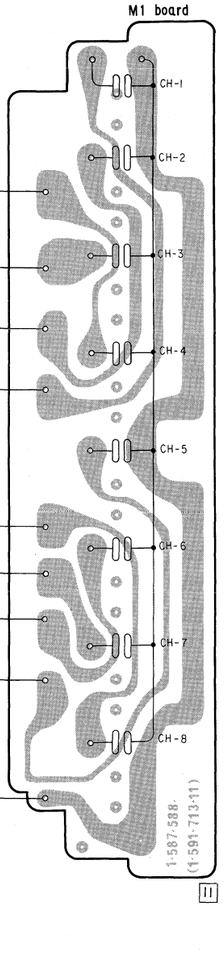


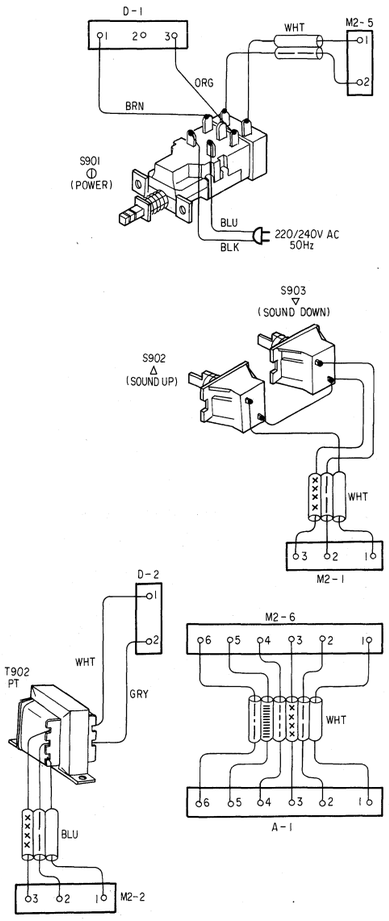


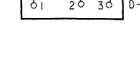










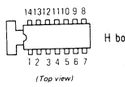


Q , IC	D
	036
	035
	034
	032 040
	031
	030
	029
	028 041
	027
	026
	025
	024
	023
	022
	021
009 003	
008 002	
001	001
006 IC001	
IC006 005	003
	002
IC004	004
	005
007	
004	
013 IC002	011
	008
IC005	007
014	006
015	009
IC003	
011	010
	012 013
010	014
Q , IC	D

Q, IC	D	ADJ
		T282
		T252
IC281		
IC251		
251		
253		
252		
		RV201
IC201		
306		
305		T302
		RV306
	306	RV301
		T305
	307	
303		
		RV305
IC301		
IC302		
	305	
		RV304
304		
	304	T304
	301, 302	
	303	RV303
301		
302		
		T301
		RV302
307		

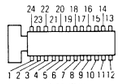
Q, IC	D	ADJ

CX095C



H board — TONE, GRY, WHT — A-10

CX108
CX109
CX177B

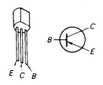


VOL H board — BRN — A-9

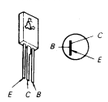
M5135P

IF OUT S board — GRY — CLEAR

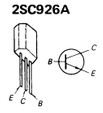
2SA733



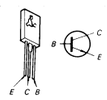
2SB649A



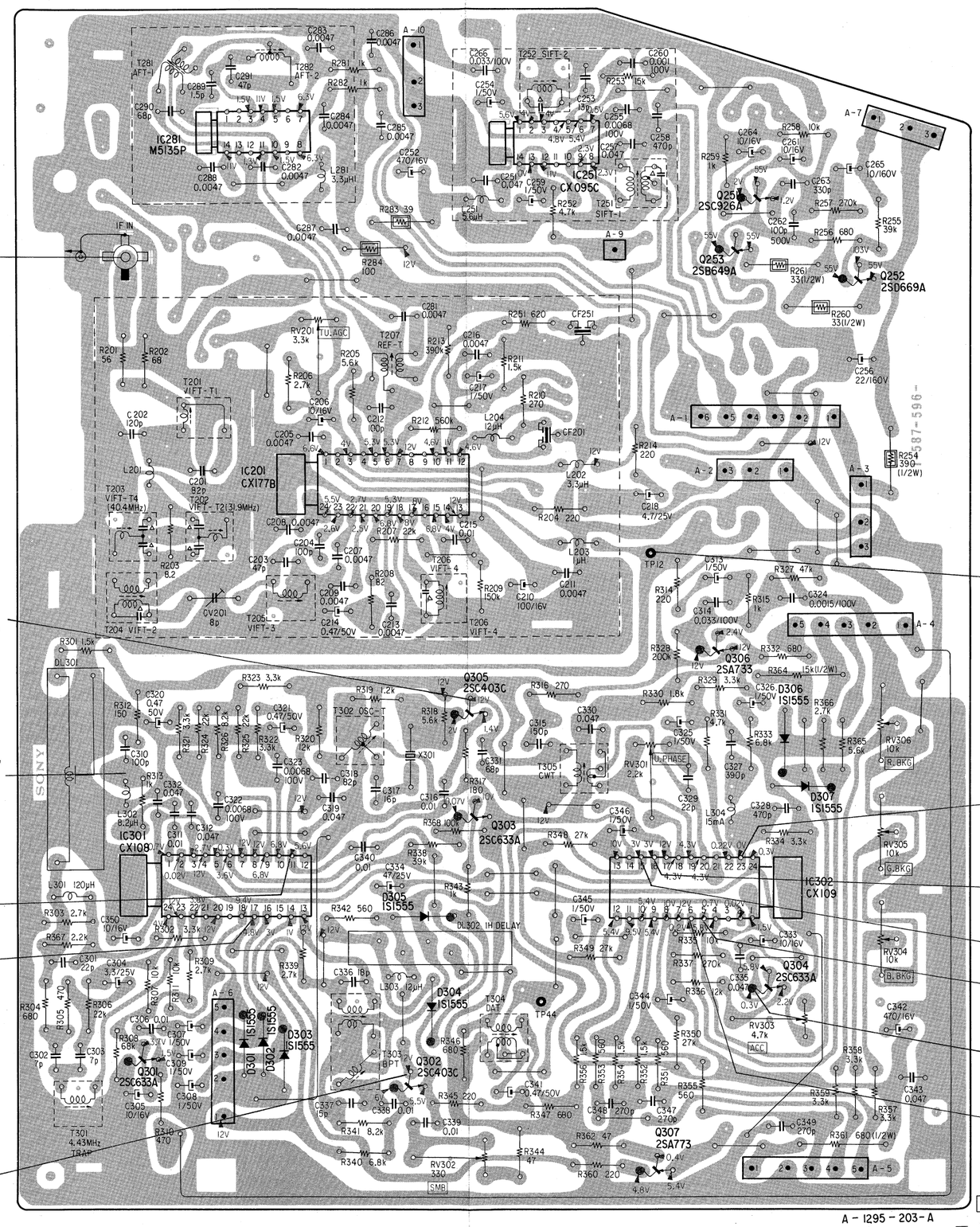
2SC403C
2SC633A
2SC926A

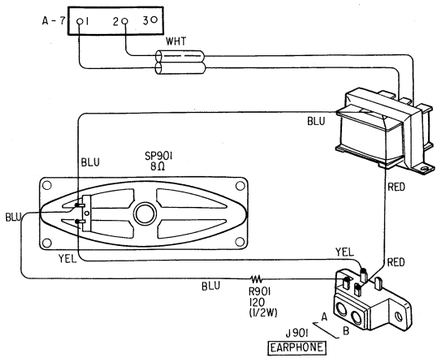


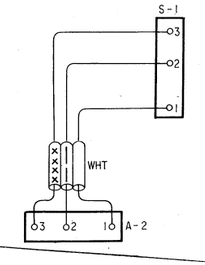
2SD669A

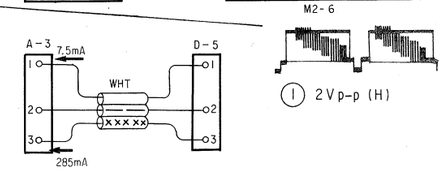


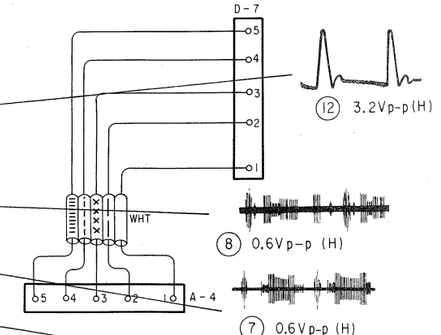
1S1555

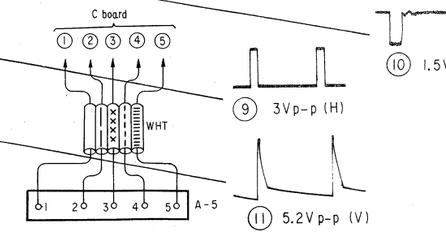


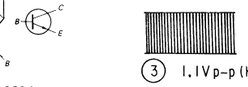






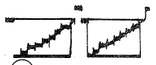


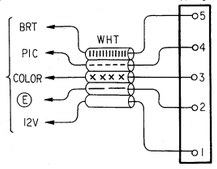



(3) 1.1Vp-p (H)

(2) 1Vp-p (H)

(5) 0.9Vp-p (H)


(4) 2.1Vp-p (H)



(6) 0.5Vp-p (H)

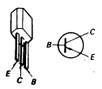
Note: ● o—: parts extracted from the component side.
● ●—: parts extracted from the conductor side.

– D Board –

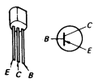
PROTECT, REG
H.V DEF, CONVERGENCE
PIN AMP, BLK RECT

D

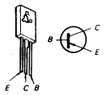
2SA677



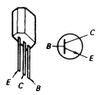
2SA733



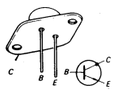
2SB649A



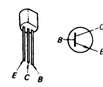
2SC633A



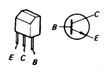
2SC1875
2SC1942



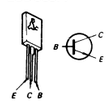
2SC2230A



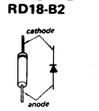
2SD471
2SD571



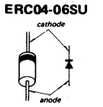
2SD669A



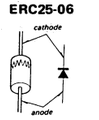
1S1555
RD3.9E
RD12E-B2
RD18-B2



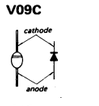
ERC04-06SU



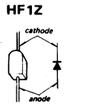
ERC25-06

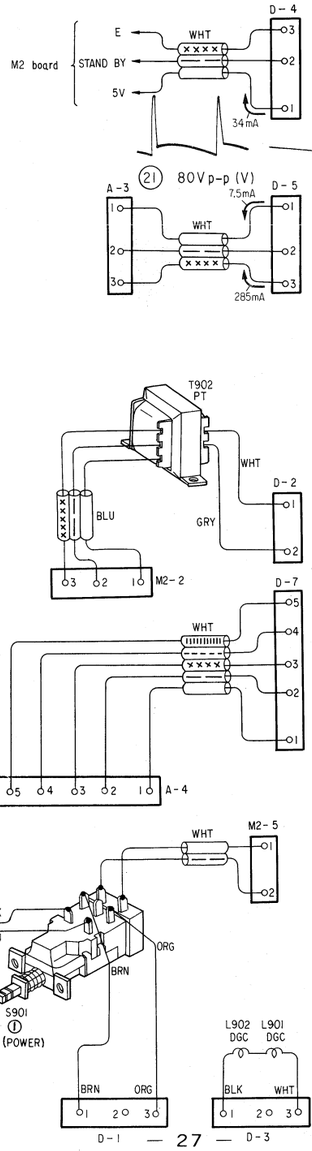


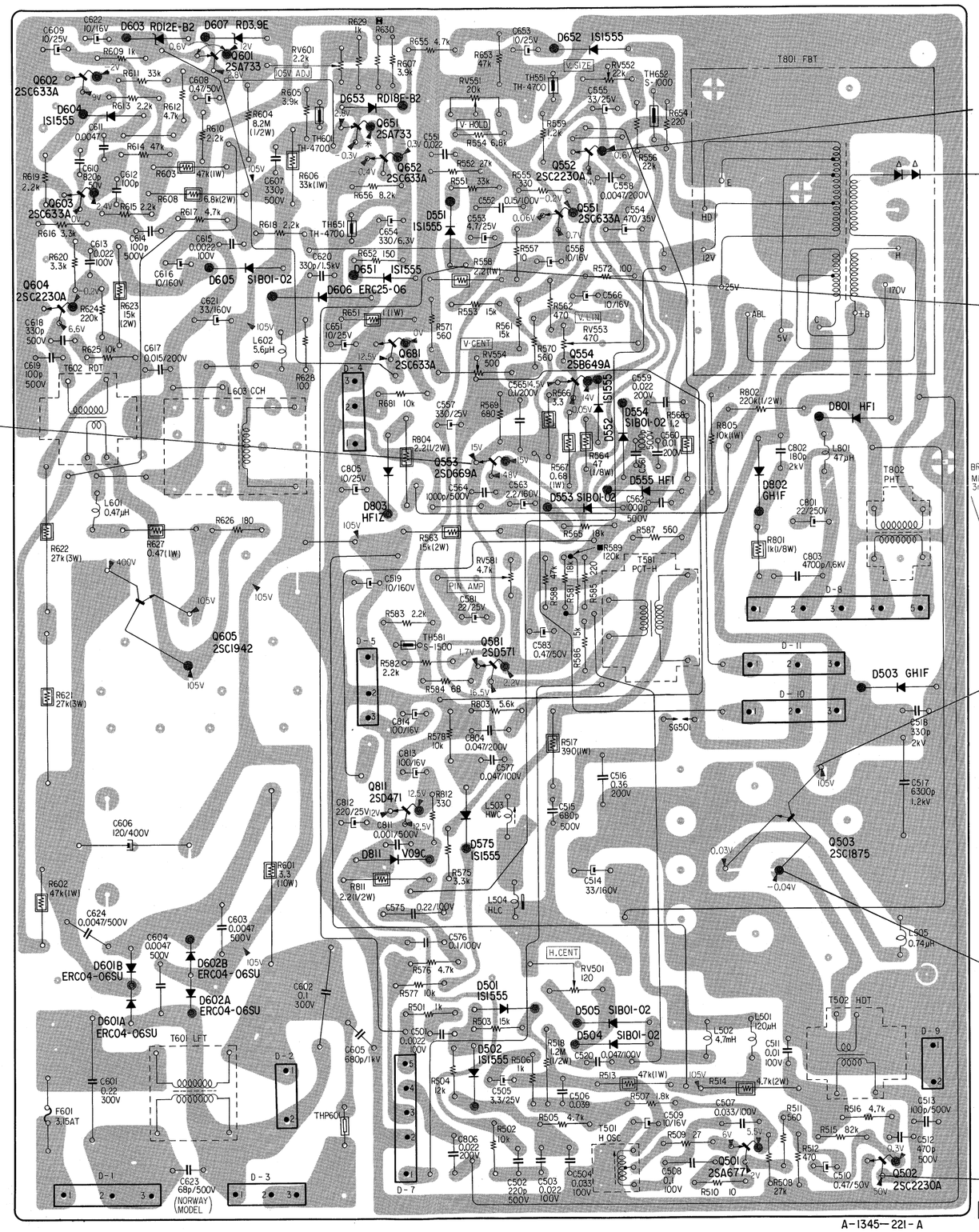
GH1F
V09C



HF1
HF1Z







A-1345-221-A

Q	D	ADJ
	603 607	
601	652	RV601
602		RV552
		RV555
	604 653	
651		
652 552		
603		
551		
	551	
	605 651	
	606	
604		
681		RV553
		RV554
554		
	552	
	554 801	
553		
	803 802	
	555	
	553	
		RV581
	605	
	581	
	503	
	811 503	575
		811
		602B
	601B	RV502
	602A	
	601A 501	
	505	
	504	
	502	
501		
502		T501

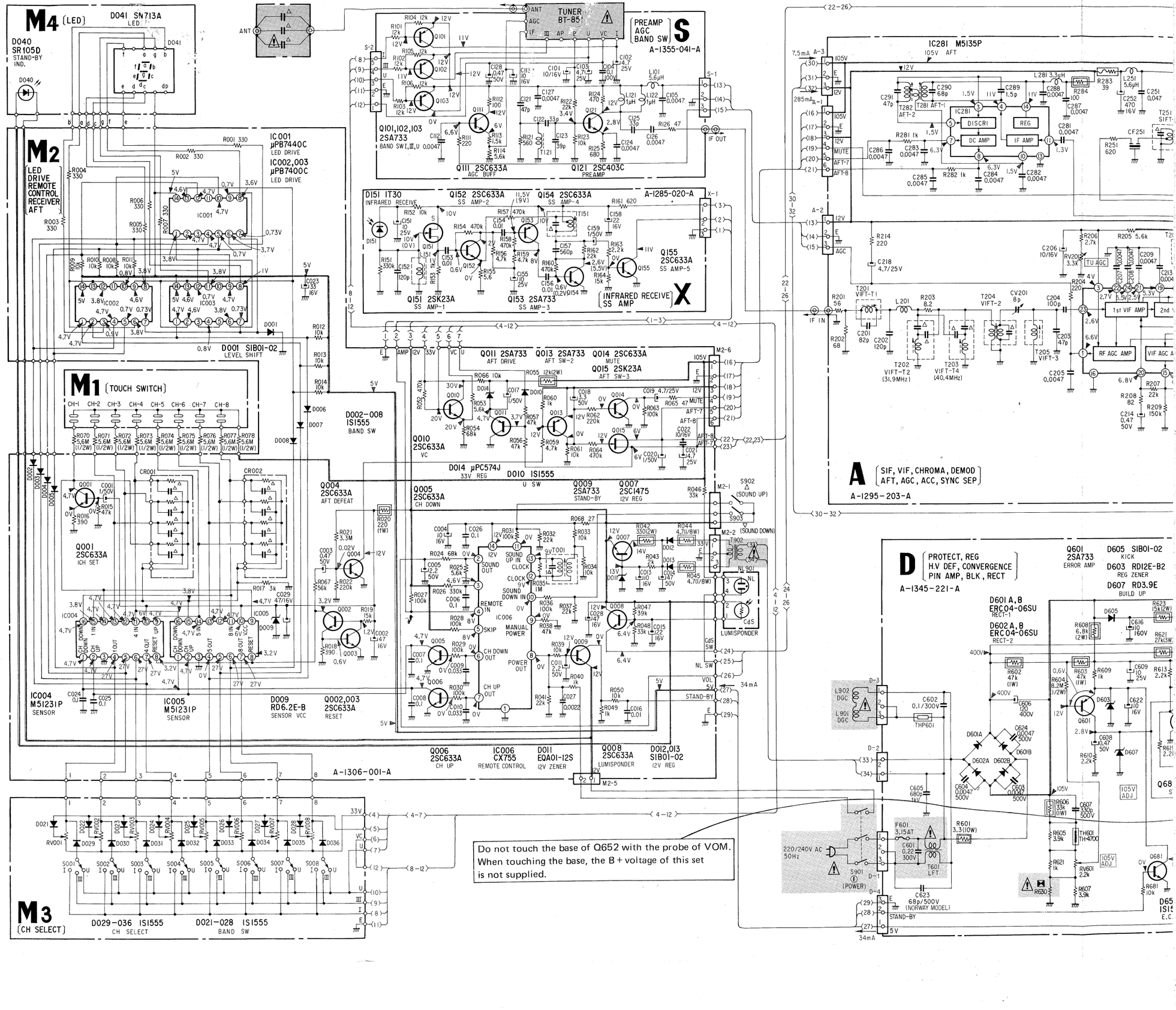
Q	D	ADJ

5-3. SCHEMATIC DIAGRAM

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ: 1000Ω; MΩ: 1000kΩ
- ▭ : nonflammable resistor.
- △ : internal component.
- ▭ : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 20,000-ohm-per-volt VOM.
- Readings are taken with a color-bar signal input.
- ——— : B+ bus.
- Voltage variations may be noted due to normal production tolerances.
- ⊘ : adjustable without removing cabinet.
- ▭ : adjustment for repair.
- Voltages on M1–4 boards are taken with the set selected to CH-1.
- Voltages in ( ) on X board are taken with RM-602 operated.



IC251 CX095C SIF

Q251 2SC926A AF AMP

Q252 2SD669A AF OUT-1

T901 SOT

SP901 8Ω

D401 IT22A BIAS

H (CUSTOMER CONTROL)

V901 PICTURE TUBE 470KXB22

Q305 2SC403C CW OSC

Q253 2SB649A AF OUT-2

Q301 2SC633A ABL

D301-303 1S1555 PROTECTOR

Q304 2SC633A ACC

Q303 2SC633A BURST BLK

IC302 CX109 DEMOD

D306 1S1555 H.PULSE CLIP

D307 1S1555 V.PULSE CLIP

Q307 2SA773 Y.DRIVE

Q302 2SC403C RPA

D304,305 1S1555 BURST SW

IC201 CX177B VIF

IC301 CX108 Y.AMP,CHROMA

Q306 2SA733 SYNC SEP

C Q701 2SC2278 R.OUT Q702 2SC2278 G.OUT Q703 2SC2278 B.OUT (R,G,B OUT)

A-1330-173-A

Q601 2SA733 ERROR AMP

D605 SIB01-02 KICK

D603 RD12E-B2 REG ZENER

D607 RD3.9E BUILD UP

Q602,603 2SC633A PWM-1,2

Q604 2SC2230A REG DRIVE

Q605 2SC1942 REG OUT

D606 ERC25-06 B+ RECT

D501,502 1S1555 AFC-1,2

Q501 2SA677 H.OSC

Q502 2SC2230A H.DRIVE

D504,505 SIB01-02 H.CENT-1,2

Q503 2SC1875 H.OUT

Q811 2SD471 I2V.REG

D811 V09C I2V RECT

D802 GH1F G2 RECT

D801 HF1 170V RECT

D503 GH1F DAMPER

T801 FBT

T802 PHT

DC801 HVR BLOCK

D601 A,B ERC04-06SU RECT-1

D602 A,B ERC04-06SU RECT-2

Q681 2SC633A STAND-BY

Q651 2SA733 ESS-1

Q652 2SC633A ESS-2

D651 1S1555 E.C.L

D653 RD18-B2 OVP

D652 1S1555 OVP RECT

Q681 2SC633A V.OUT

Q551 2SC633A V.OSC

D552 1S1555 V.BIAS

Q552 2SC2230A V.DRIVE

Q553 2SD669A V.OUT-1

Q554 2SB649A V.OUT-2

D555 HF1 24V RECT

D575 1S1555 V.BLK

Q581 2SD571 PIN AMP

D803 HF1Z 5V RECT

DY

L903

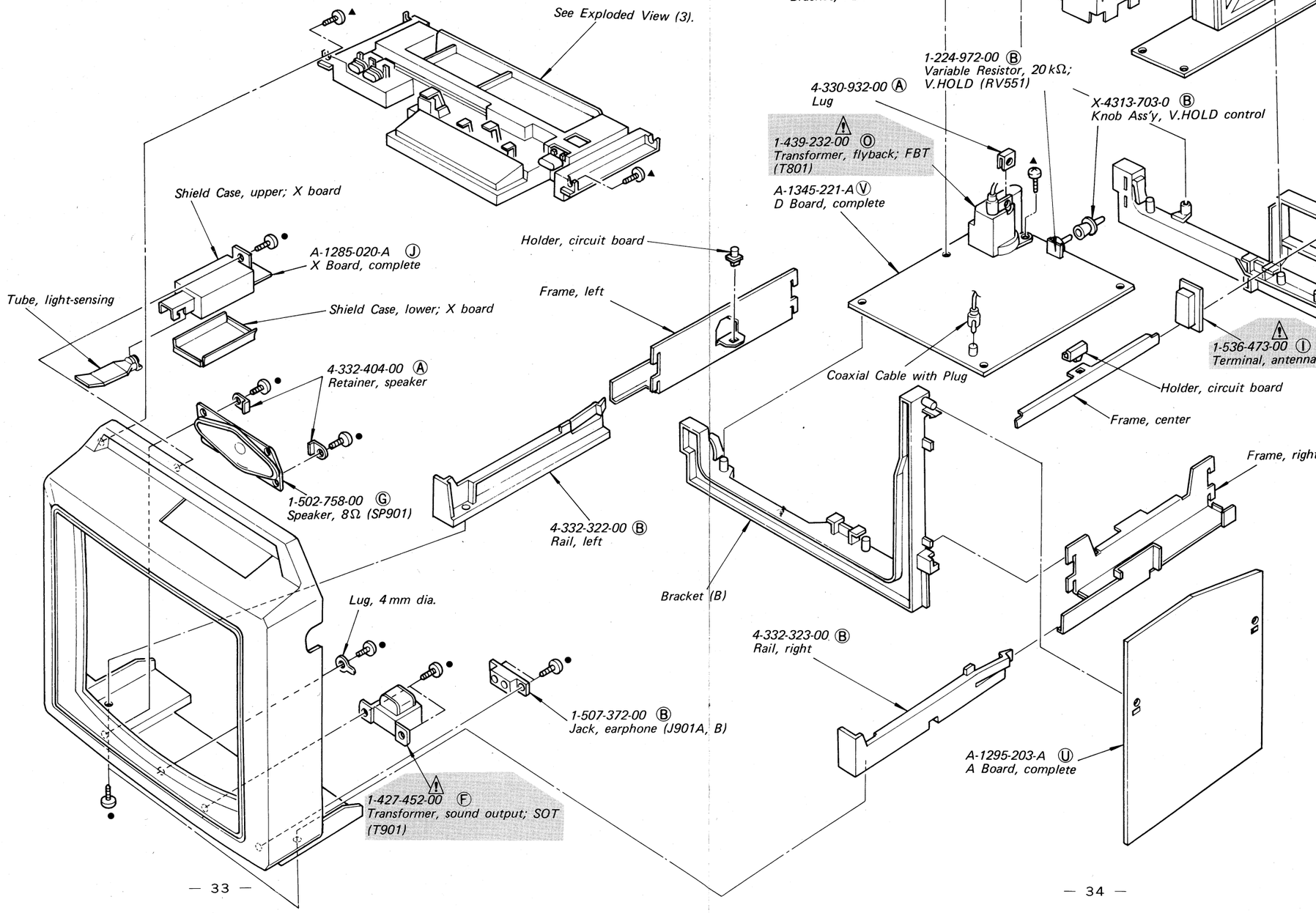
SECTION 6
EXPLODED VIEWS

(1)

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- ● : TA, BV 3 x 12
  ▲ : TA, BV 4 x 12



(2)

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- ● : TA, BV 3 x 12
  ▲ : TA, BV 4 x 12

◆ B
X-4332-308-0 (F)
Lid Ass'y, control box

◆ A
3-703-035-11 (A)
Shaft, lid

◆ C
Ventilator

X-4332-306-0 (T)
Case Ass'y, including parts marked ◆ A—◆ E

4-332-331-01 (A)
Label, PTB

◆ E
4-332-330-01 (A)
Label, model name

⚠ 1-226-271-00 (L)
High-voltage Resistor Block (DC801)

4-306-034-00 (A)
Nut, flange; 5 mm dia.

◆ D
4-316-003-00 (A)
Anchor, power cord

Holder, DGC

Shield, picture tube

1-452-060-21 (B)
Magnet, BMC

A-1330-173-A (L)
C Board, complete

1-526-086-XX (B)
Socket, picture tube

⚠ 8-738-502-05 (Z)
Picture Tube, 470KXB22 (V901)

Cap, anode; included in HV resister block

Bracket, case

⚠ 1-452-112-31 (E)
Neck Ass'y (L905)

◆ E
4-329-127-00 (B)
Clamp, power cord

4-305-312-00 (A)
Washer

3-703-003-00 (B)
Spacer, DY

4-306-034-00 (A)
Nut, flange; 5 mm dia.

Bracket (S2) Ass'y, picture tube

Screw, special

4-332-333-00 (B)
Holder, tuner

⚠ 1-442-810-00 (H)
Transformer, power; PT (T902)

Bracket (S1) Ass'y, picture tube

⚠ 1-451-159-00 (O)
Deflection Yoke, DY (L903)

4-308-870-00 (A)
Clip, lead wire

Holder, DGC

Insulator

1-452-032-00 (A)
Magnet, disk; 10 mm dia.

4-303-774-XX (A)
Spring

⚠ 4-022-115-00 (A)
Holder, power cord

1-452-094-00 (B)
Magnet, retatable disk; 15 mm dia.

X-4332-305-0 (O)
Mask Ass'y, front; incluing part marked ○ A

⚠ 1-425-894-00 (K)
Coil, degaussing; DGC (L901, 902)

X-4309-608-0 (B)
Permalloy Ass'y, convergence compensation

Screw, special

Bracket, case

⚠ 1-534-817-XX (D)
Cord, power

4-305-312-00 (A)
Washer

Bracket (S2) Ass'y, picture tube

○ A
3-701-933-00 (B)
Emblem, SONY

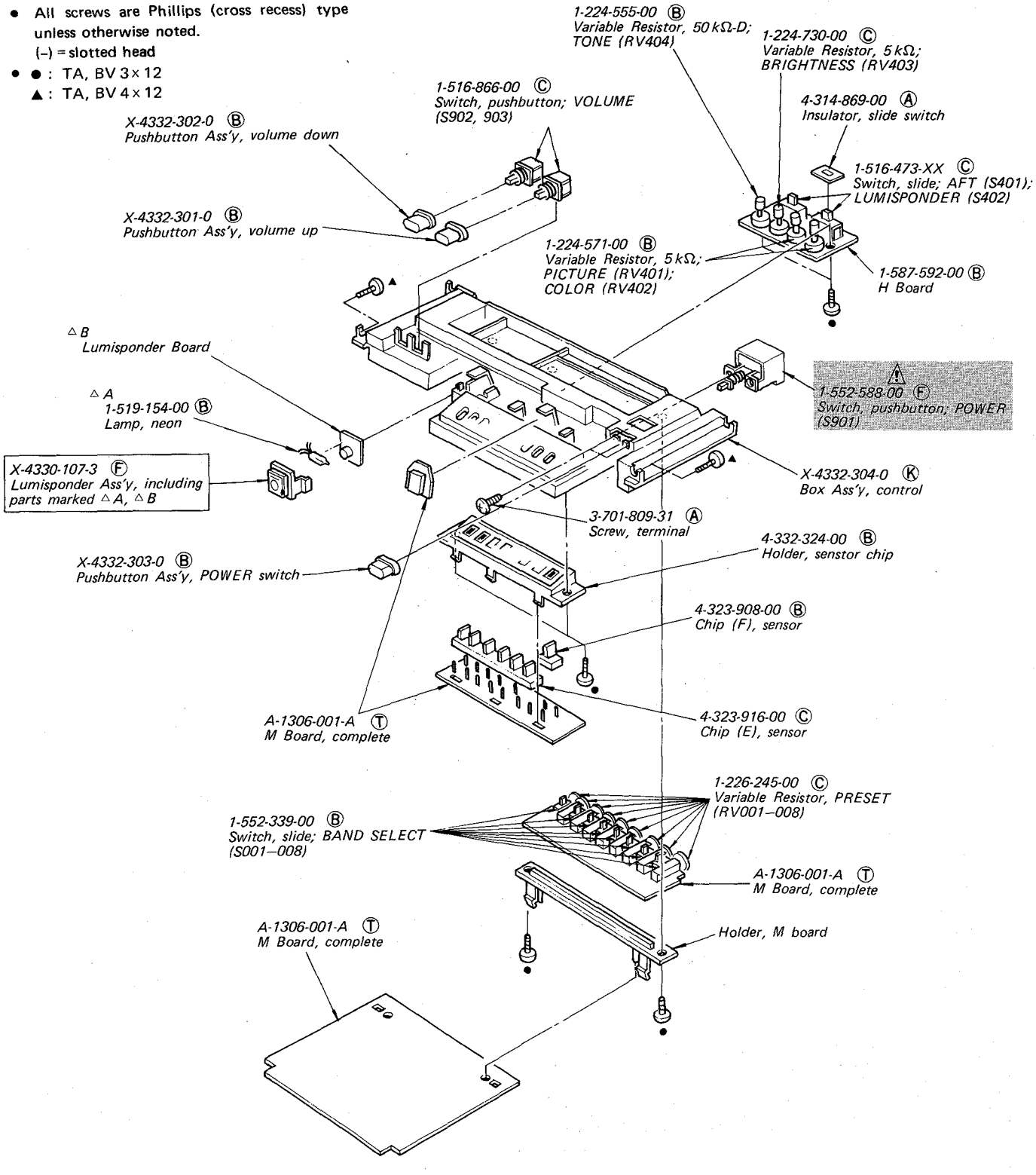
A B C D

(3)

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- ● : TA, BV 3 × 12
  ▲ : TA, BV 4 × 12



SECTION 7
ELECTRICAL PARTS LIST

Ref. No.	*Part No.*	*Description*
		TUNER AND CIRCUIT BOARDS
	A-1285-020-A	(J) X Board, complete
	A-1295-203-A	(U) A Board, complete
	A-1306-001-A	(T) M Board, complete
	A-1330-173-A	(L) C Board, complete
	A-1345-221-A	(V) D Board, complete
	A-1355-041-A	(S) S Board, complete
	⚠ 1-463-172-00	(T) Tuner, BT-851
	1-587-592-00	(B) H Board
		SEMICONDUCTORS
		Transistors
Q001–006		(A) 2SC633A
Q007		(B) 2SC1475
Q008		(A) 2SC633A
Q009		(B) 2SA733
Q010		(A) 2SC633A
Q011,013		(B) 2SA733
Q014		(A) 2SC633A
Q015		(C) 2SK23A
Q101–103		(B) 2SA733
Q111		(A) 2SC633A
Q121		(B) 2SC403C
Q151		(C) 2SK23A
Q152		(A) 2SC633A
Q153		(A) 2SA677
Q154,155		(A) 2SC633A
Q251		(D) 2SC926A
Q252		(C) 2SD669A
Q253		(C) 2SB649A
Q301		(A) 2SC633A
Q302		(B) 2SC403C
Q303,304		(A) 2SC633A
Q305		(B) 2SC403C
Q306		(B) 2SA733
Q307		(B) 2SA773
Q501		(A) 2SA677
Q502		(D) 2SC2230A
Q503		(I) 2SC1875
Q551		(A) 2SC633A
Q552		(D) 2SC2230A
Q553		(C) 2SD669A
Q554		(C) 2SB649A
Q581		(B) 2SD571
Q601		(B) 2SA733
Q602,603		(A) 2SC633A
Q604		(D) 2SC2230A
Q605		(I) 2SC1942
Q651		(B) 2SA733
Q652,681		(A) 2SC633A
Q701–703		(C) 2SC2278
Q811		(B) 2SD471
		ICs
IC001		(B) μPB7440C
IC002,003		(B) μPB7400C
IC004,005		(E) M51231P
IC006		(L) CX755
IC201		(I) CX177
IC251		(F) CX095C
IC281		(H) M5135P
IC301		(K) CX108
IC302		(K) CX109
		Diodes
D001		(B) SIB01-02
D002–008		(B) 1S1555
D009		(B) RD6.2E-B
D010		(B) 1S1555
D011		(B) EQA01-12S
D012,013		(B) SIB01-02
D014		(E) μPC574J
D021–036		(B) 1S1555

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
D040		Ⓑ SR105D
D041		Ⓗ SN713A
D151		Ⓖ D1101
D201		Ⓑ 1S1555
D301–307		Ⓑ 1S1555
D401		Ⓑ 1T22A
D501,502		Ⓑ 1S1555
D503		Ⓒ GH1F
D504,505		Ⓑ SIB01-02
D551,552		Ⓑ 1S1555
D553,554		Ⓑ SIB01-02
D555		Ⓑ HF1
D575		Ⓑ 1S1555
D601A,B D602A,B)		Ⓒ ERC04-06SU
D603		Ⓑ RD12E-B2
D604		Ⓑ 1S1555
D605		Ⓑ SIB01-02
D606		Ⓒ ERC25-06
D607		Ⓑ RD3.9E-B
D651,652		Ⓑ 1S1555
D653		Ⓑ RD18E-B2Z
D801		Ⓑ HF1
D802		GH1F
D803		Ⓑ HF1Z
D811		Ⓑ V09C

Miscellaneous

TH551	1-800-070-XX	Ⓐ Thermistor, TH-4700
TH581	1-800-069-XX	Ⓐ Thermistor, TH-1500
TH601,651	1-800-070-XX	Ⓐ Thermistor, TH-4700
⇒TH652	1-800-198-XX	Ⓐ Thermistor, S-1250
THP601	1-800-665-00	Ⓒ Thermistor (positive)

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref. No.	Part No.	Description

COILS

All coils are microinductors unless otherwise noted.

L101	1-407-187-XX	Ⓐ 5.6μH
L121,122	1-407-178-XX	Ⓐ 1μH
L151	1-409-315-00	Ⓑ Inductor
L201	1-425-613-00	Ⓐ Inductor
L202	1-407-184-XX	Ⓐ 3.3μH
L203	1-407-178-XX	Ⓐ 1μH
L204	1-407-158-XX	Ⓐ 12μH
L251	1-407-187-XX	Ⓐ 5.6μH
L281	1-407-184-XX	Ⓐ 3.3μH
L301	1-407-706-00	Ⓐ 120μH
L302	1-407-189-XX	Ⓐ 8.2μH
L303	1-407-158-XX	Ⓐ 12μH
L304	1-407-208-XX	Ⓑ 15 mH
L501	1-459-215-00	Ⓑ 120μH
L502	1-459-060-00	Ⓑ 4.7 mH
L503	1-459-237-00	Ⓒ HWC
L504	1-459-236-00	Ⓒ Horizontal Linearity, HLC
L505	1-407-365-00	Ⓐ 0.74μH, spook choke
L601	1-407-365-00	Ⓐ 0.74μH, spook choke
L602	1-407-187-XX	Ⓐ 5.6μH
L603	1-421-353-00	Ⓕ Horizontal Centering Choke, HCC
L701	1-407-174-XX	Ⓐ 270μH
L801	1-407-165-XX	Ⓐ 47μH
L901,902	⚠1-425-894-00	Ⓚ Degaussing, DGC
L903	⚠1-451-159-00	Ⓞ Deflection Yoke, DY
L905	⚠1-452-112-31	Ⓔ Neck Ass'y
DL301	1-415-101-00	Ⓓ Delay Line
DL302	1-415-131-00	Ⓙ 1 H Delay Line

TRANSFORMERS AND FILTERS

CF201	1-404-134-00	Ⓑ Ceramic Filter
CF251	1-527-263-00	Ⓑ Ceramic Filter

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
T001	1-405-725-00	Ⓒ Coil, oscillation
T121	1-404-096-00	Ⓑ Coil, VHF
T151	1-425-914-00	Ⓓ Coil, resonance
T201	1-409-225-00	Ⓑ VIFT-T1
T202	1-409-312-00	Ⓑ VIFT-T2, 31.9 MHz
T203	1-409-314-00	Ⓑ VIFT-T4, 40.4 MHz
T204	1-403-947-00	Ⓑ VIFT-2
T205	1-404-047-00	Ⓑ VIFT-3
T206	1-403-729-00	Ⓑ VIFT-4
T207	1-404-080-00	Ⓑ REF-T
T251	1-404-097-00	Ⓑ SIFT-1
T252	1-403-843-00	Ⓑ SIFT-2
T281	1-403-810-00	Ⓑ AFT-1
T282	1-403-811-00	Ⓑ AFT-2
T301	1-409-193-00	Ⓑ 4.43 MHz Trap
T302	1-405-733-00	Ⓑ Oscillation, OSC-T
T303	1-425-927-00	Ⓒ Bandpass, BPT
T304	1-404-081-00	Ⓑ Delay Adjustment, DAT
T305	1-425-928-00	Ⓑ Continuous-wave Oscillation, CWT
T501	1-405-760-00	Ⓑ Horizontal Oscillation, H.OSC
T502	1-437-071-00	Ⓒ Horizontal Drive, HDT
T581	1-421-351-00	Ⓕ Horizontal Pincushion Correction, PCT-H
T601	⚠1-421-352-00	Ⓕ Line Filter, LFT
T602	1-446-194-00	Ⓑ Regulator Drive, RDT
T801	⚠1-439-232-00	Ⓞ Flyback, FBT
T802	1-421-354-00	Ⓓ PHT
T901	⚠1-427-452-00	Ⓕ Sound Output, SOT
T902	⚠1-442-810-00	Ⓗ Power, PT

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted.
50WV or less are not indicated except for electrolytics. p: μμF, elect: electrolytic

C001	1-121-391-11	Ⓐ 1	50V	elect
C002	1-121-409-00	Ⓐ 47	16V	elect

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
C003	1-121-726-11	Ⓐ 0.47 50V elect
C004	1-121-651-11	Ⓐ 10 16V elect
C005	1-121-450-00	Ⓐ 2.2 50V elect
C006–008	1-161-025-11	Ⓐ 0.1 (semiconductor)
C009,010	1-161-019-11	Ⓐ 0.033 (semiconductor)
C011	1-121-450-00	Ⓐ 2.2 50V elect
C013	1-121-651-11	Ⓐ 10 16V elect
C014	1-121-411-11	Ⓐ 47 50V elect
C015	1-121-479-11	Ⓐ 22 16V elect
C016	1-101-004-21	Ⓐ 0.01
C017	1-121-391-11	Ⓐ 1 50V elect
C018	1-121-393-00	Ⓐ 3.3 50V elect
C019	1-121-395-00	Ⓐ 4.7 25V elect
C020	1-121-391-11	Ⓐ 1 50V elect
C021	1-121-395-00	Ⓐ 4.7 25V elect
C022	1-121-806-11	Ⓑ 10 16V elect (nonpolarized)
C023	1-121-403-51	Ⓐ 33 16V elect
C024–026	1-161-025-11	Ⓐ 0.1 (semiconductor)
C027	1-101-002-00	Ⓐ 0.0022
C028,029	1-121-409-00	Ⓐ 47 16V elect
C101	1-121-651-11	Ⓐ 10 16V elect
C102,103	1-121-395-11	Ⓐ 4.7 25V elect
C104	1-108-389-00	Ⓐ 0.1 100V mylar
C105,112	1-102-125-21	Ⓐ 0.0047
C113	1-121-651-00	Ⓐ 10 16V elect
C121	1-102-887-11	Ⓐ 47p
C122	1-102-884-11	Ⓐ 33p
C123	1-102-889-11	Ⓐ 39p
C124	1-102-125-21	Ⓐ 0.0047
C125	1-102-963-21	Ⓐ 33p
C126,127	1-102-125-21	Ⓐ 0.0047
C128	1-121-726-51	Ⓐ 0.47 50V elect
C151	1-121-398-11	Ⓐ 10 25V elect
C152	1-102-816-00	Ⓐ 120p
C153,154	1-161-013-11	Ⓐ 0.01 (semiconductor)
C155	1-121-398-11	Ⓐ 10 25V elect
C156	1-161-013-11	Ⓐ 0.01 (semiconductor)
C157	1-102-115-21	Ⓐ 560p
C158	1-121-479-11	Ⓐ 22 16V elect

Ref. No.	Part No.		Description		
C159	1-121-391-11	Ⓐ 1	50V	elect	
C201	1-102-971-00	Ⓐ 82p			
C202	1-102-816-21	Ⓐ 120p			
C203	1-101-984-11	Ⓐ 47p			
C204	1-102-973-21	Ⓐ 100p			
C205	1-102-102-11	Ⓐ 0.0047			
C206	1-121-651-11	Ⓐ 10	16V	elect	
C207–209	1-102-102-11	Ⓐ 0.0047			
C210	1-121-415-11	Ⓐ 100	16V	elect	
C211	1-102-102-11	Ⓐ 0.0047			
C212	1-102-529-11	Ⓐ 100p			
C213	1-102-102-11	Ⓐ 0.0047			
C214	1-121-726-11	Ⓐ 0.47	50V	elect	
C215	1-102-129-21	Ⓐ 0.01			
C216	1-102-102-11	Ⓐ 0.0047			
C217	1-121-391-11	Ⓐ 1	50V	elect	
C218	1-121-395-11	Ⓐ 4.7	25V	elect	
C251	1-101-006-21	Ⓐ 0.047			
C252	1-121-426-51	Ⓑ 470	16V	elect	
C253	1-102-667-11	Ⓐ 13p			
C254	1-121-391-11	Ⓐ 1	50V	elect	
C255	1-108-624-11	Ⓐ 0.0068	100V	mylar	
C256	1-123-253-51	Ⓑ 22	160V	elect	
C257	1-101-006-21	Ⓐ 0.047			
C258	1-102-824-21	Ⓐ 470p			
C259	1-121-391-11	Ⓐ 1	50V	elect	
C260	1-108-365-00	Ⓐ 0.001	100V	mylar	
C261	1-121-651-11	Ⓐ 10	16V	elect	
C262	1-101-810-11	Ⓐ 100p	500V		
C263	1-102-112-11	Ⓐ 330p			
C264	1-121-651-11	Ⓐ 10	16V	elect	
C265	1-121-999-11	Ⓑ 10	160V	elect	
C266	1-108-383-12	Ⓐ 0.033	100V	mylar	
C281–288	1-102-102-11	Ⓐ 0.0047			
C289	1-101-576-11	Ⓐ 1.5p			
C290	1-102-525-11	Ⓐ 68p			
C291	1-102-852-11	Ⓐ 47p			
C301	1-102-959-21	Ⓐ 22p			
C302,303	1-102-662-11	Ⓐ 7p			

Ref. No.	Part No.		Description		
C304	1-121-392-11	Ⓐ 3.3	25V	elect	
C305	1-121-651-11	Ⓐ 10	16V	elect	
C306	1-101-004-21	Ⓐ 0.01			
C307–309	1-121-651-11	Ⓐ 10	16V	elect	
C310	1-102-973-21	Ⓐ 100p			
C311	1-101-004-21	Ⓐ 0.01			
C312	1-101-006-21	Ⓐ 0.047			
C313	1-121-391-11	Ⓐ 1	50V	elect	
C314	1-108-383-12	Ⓐ 0.033	100V	mylar	
C315	1-101-361-21	Ⓐ 150p			
C316	1-101-004-21	Ⓐ 0.01			
C317	1-102-512-11	Ⓐ 16p			
C318	1-102-700-11	Ⓐ 82p			
C319	1-101-006-21	Ⓐ 0.047			
C320,321	1-121-726-11	Ⓐ 0.47	50V	elect	
C322,323	1-108-624-11	Ⓐ 0.0068	100V	mylar	
C324	1-108-367-12	Ⓐ 0.0015	100V	mylar	
C325,326	1-121-391-11	Ⓐ 1	50V	elect	
C327	1-102-822-21	Ⓐ 390p			
C328	1-102-824-21	Ⓐ 470p			
C329	1-102-892-11	Ⓐ 22p			
C330	1-101-006-21	Ⓐ 0.047			
C331	1-102-676-11	Ⓐ 68p			
C332	1-101-006-21	Ⓐ 0.047			
C333	1-121-651-11	Ⓐ 10	16V	elect	
C334	1-121-410-00	Ⓑ 47	25V	elect	
C335	1-101-006-21	Ⓐ 0.047			
C336	1-102-670-11	Ⓐ 18p			
C337	1-102-668-11	Ⓐ 15p			
C338–340	1-101-004-21	Ⓐ 0.01			
C341	1-121-726-11	Ⓐ 0.47	50V	elect	
C342	1-121-426-51	Ⓑ 470	16V	elect	
C343	1-101-006-21	Ⓐ 0.047			
C344–346	1-121-391-11	Ⓐ 1	50V	elect	
C347–349	1-102-980-21	Ⓐ 270p			
C350	1-121-651-11	Ⓐ 10	16V	elect	
C501	1-108-369-12	Ⓐ 0.0022	100V	mylar	
C502	1-102-244-11	Ⓑ 220p	500V		
C503	1-108-381-12	Ⓑ 0.022	100V	mylar	
C504	1-108-383-12	Ⓐ 0.033	100V	mylar	

Ref. No.	Part No.		Description		
C505	1-121-392-11	Ⓐ 3.3	25V	elect	
C506	1-108-384-00	Ⓐ 0.039	100V	mylar	
C507	1-130-117-11	Ⓑ 0.033	100V	polyethylene	
C508	1-108-389-12	Ⓑ 0.1	100V	mylar	
C509	1-121-651-11	Ⓐ 10	16V	elect	
C510	1-121-726-11	Ⓐ 0.47	50V	elect	
C511	1-108-377-12	Ⓐ 0.01	100V	mylar	
C512	1-102-232-11	Ⓐ 470p	500V		
C513	1-101-810-11	Ⓐ 100p	500V		
C514	1-121-757-00	Ⓑ 33	160V	elect	
C515	1-102-002-11	Ⓐ 680p	500V		
C516	1-130-139-11	Ⓒ 0.36	200V	polyethylene	
C517	1-130-198-11	Ⓑ 6300p	1.2kV	polyethylene	
C518	1-102-327-11	Ⓑ 330p	1.5kV		
C519	1-121-999-00	Ⓑ 10	160V	elect	
C520	1-108-634-11	Ⓐ 0.047	100V	mylar	
C551	1-161-017-11	Ⓐ 0.022		(semiconductor)	
C552	1-108-391-12	Ⓑ 0.15	100V	mylar	
C553	1-121-395-11	Ⓐ 4.7	25V	elect	
C554	1-121-361-11	Ⓑ 470	35V	elect	
C555	1-121-404-11	Ⓐ 33	25V	elect	
C556	1-131-371-00	Ⓑ 10	16V	tantalum	
C557	1-121-654-11	Ⓑ 330	25V	elect	
C558	1-108-417-12	Ⓑ 0.0047	200V	mylar	
C559	1-108-425-12	Ⓑ 0.022	200V	mylar	
C560	1-108-692-11	Ⓐ 0.01	200V	mylar	
C561,562	1-101-845-00	Ⓐ 0.001	500V		
C563	1-123-267-00	Ⓑ 2.2	160V	elect	
C564	1-101-845-00	Ⓐ 0.001	500V		
C565	1-108-704-00	Ⓑ 0.1	200V	mylar	
C566	1-121-651-00	Ⓐ 10	16V	elect	
C575	1-108-393-12	Ⓑ 0.22	100V	mylar	
C576	1-108-389-12	Ⓑ 0.1	100V	mylar	
C577	1-108-385-12	Ⓐ 0.047	100V	mylar	
C581	1-121-480-11	Ⓐ 22	25V	elect	
C583	1-121-726-00	Ⓐ 0.47	50V	elect	
C601	⚠1-108-745-11	Ⓓ 0.22	300V	polyethylene	
C602	1-108-747-11	Ⓑ 0.1	300V	polyethylene	
C603,604	1-102-085-11	Ⓐ 0.0047	500V		
C605	1-102-219-11	Ⓐ 680p	1kV		

Ref. No.	Part No.		Description		
C606	1-123-128-11	Ⓔ 120	400V	elect	
C607	1-102-030-11	Ⓐ 330p	500V		
C608	1-121-726-11	Ⓐ 0.47	50V	elect	
C609	1-121-398-11	Ⓐ 10	25V	elect	
C610	1-130-017-11	Ⓐ 820p		polyethylene	
C611	1-108-234-12	Ⓐ 0.0047		mylar	
C612	1-102-973-00	Ⓐ 100p			
C613	1-108-381-12	Ⓑ 0.022	100V	mylar	
C614	1-101-810-11	Ⓐ 100p	500V		
C615	1-108-369-12	Ⓐ 0.0022	100V	mylar	
C616	1-121-999-00	Ⓑ 10	160V	elect	
C617	1-108-694-11	Ⓐ 0.015	200V	mylar	
C618	1-102-030-11	Ⓐ 330p	500V		
C619	1-101-810-11	Ⓐ 100p	500V		
C620	1-102-327-11	Ⓑ 330p	1.5kV		
C621	1-121-757-00	Ⓑ 33	160V	elect	
C622	1-121-651-51	Ⓐ 10	16V	elect	
C623	1-102-989-51	Ⓐ 68p	500V	(Norway model)	
C624	1-102-085-51	Ⓐ 0.0047	500V		
C651,653	1-121-398-00	Ⓐ 10	25V	elect	
C654	1-121-751-11	Ⓐ 330	6.3V	elect	
C701	1-102-980-21	Ⓐ 270p			
C702,703	1-102-978-21	Ⓐ 220p			
C704	1-102-155-11	Ⓐ 330p	2kV		
C751	1-102-050-11	Ⓐ 0.01	500V		
C752	1-129-714-11	Ⓐ 0.001	630V	polyethylene	
C753	1-102-030-11	Ⓐ 330p	500V		
C801	1-123-005-11	Ⓑ 22	250V	elect	
C802	1-102-154-11	Ⓐ 180p			
C803	1-102-223-11	Ⓐ 4700p	1.6kV		
C804	1-108-429-12	Ⓑ 0.047	200V	mylar	
C805	1-121-398-11	Ⓐ 10	25V	elect	
C806	1-108-425-12	Ⓑ 0.022	200V	mylar	
C811	1-101-845-00	Ⓐ 0.001	500V		
C812	1-121-422-11	Ⓑ 220	25V	elect	
C813,814	1-121-415-11	Ⓐ 100	16V	elect	
CV201	1-141-138-XX	Ⓐ 8p		trimmer	

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted.
Refer to the list on page 18 for their part numbers.
All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
kΩ: 1000Ω, MΩ: 1000kΩ

Ref. No.	Part No.			Description
R020	1-213-135-11	Ⓐ	220 1W	metal oxide (nonflammable)
R021	1-202-725-00	Ⓐ	3.3M ½W	composition
R042	1-206-652-11	Ⓐ	330 2W	metal oxide (nonflammable)
R044,045	1-246-981-11	Ⓐ	4.7 1/8W	carbon (nonflammable)
R055	1-206-690-11	Ⓐ	12k 2W	metal oxide (nonflammable)
R070–078	1-244-965-00	Ⓐ	5.6M ½W	Carbon
R254	1-212-996-11	Ⓐ	390 ½W	fusible (nonflammable)
R260,261	1-246-875-00	Ⓐ	33 ½W	carbon (nonflammable)
R283	1-217-394-00	Ⓑ	39 ¼W	fusible (nonflammable)
R284	1-247-005-11	Ⓐ	100 ¼W	carbon (nonflammable)
R361	1-244-869-00	Ⓐ	680 ½W	carbon
R364	1-244-901-00	Ⓐ	15k ½W	carbon
R513	1-213-163-11	Ⓐ	47k 1W	metal oxide (nonflammable)
R514	1-206-680-11	Ⓐ	4.7k 2W	metal oxide (nonflammable)
R517	1-213-138-11	Ⓐ	390 1W	metal oxide (nonflammable)
R518	1-202-719-00	Ⓐ	1.2M ½W	composition
R558	1-212-364-11	Ⓑ	2.2 1W	metal oxide (nonflammable)
R563	1-206-692-11	Ⓐ	15k 2W	metal oxide (nonflammable)
R564	1-246-987-00	Ⓐ	47 1/8W	carbon (nonflammable)
R566	1-246-413-00	Ⓐ	3.3 ¼W	carbon (nonflammable)
R567	1-212-358-11	Ⓑ	0.68 1W	metal oxide (nonflammable)
R568	1-246-997-00	Ⓐ	1.2 ¼W	carbon (nonflammable)
R601	1-205-532-11	Ⓑ	3.3 10W	cement coated (nonflammable)
R602,603	1-213-163-11	Ⓐ	47k 1W	metal oxide (nonflammable)
R604	1-202-730-11	Ⓐ	8.2M ½W	composition
R606	1-213-161-11	Ⓐ	33k 1W	metal oxide (nonflammable)
R608	1-206-684-11	Ⓐ	6.8k 2W	metal oxide (nonflammable)
R621,622	1-206-759-11	Ⓑ	27k 3W	metal oxide (nonflammable)
R623	1-206-692-11	Ⓐ	15k 2W	metal oxide (nonflammable)
R627	1-212-356-11	Ⓑ	0.47 1W	metal oxide (nonflammable)
⧓ R630	⚠		¼W	carbon
R651	1-212-360-11	Ⓐ	1 1W	metal oxide (nonflammable)
R710–712	1-206-692-11	Ⓐ	15k 2W	metal oxide (nonflammable)
R713–715	1-244-885-00	Ⓐ	3.3k ½W	carbon
R751	1-244-939-00	Ⓐ	560k ½W	carbon
R752	1-244-929-00	Ⓐ	220k ½W	carbon
R753	1-244-901-00	Ⓐ	15k ½W	carbon
R754–756	1-244-939-00	Ⓐ	560k ½W	carbon
R757	1-244-913-00	Ⓐ	47k ½W	carbon
R758	1-244-843-00	Ⓐ	56 ½W	carbon
R801	1-247-040-11	Ⓐ	1k 1/8W	carbon (nonflammable)
R802	1-244-929-00	Ⓐ	220k ½W	composition
R804	1-210-881-11	Ⓑ	2.2 ½W	carbon (nonflammable)
R805	1-213-155-00	Ⓐ	10k 1W	composition
R811	1-210-881-11	Ⓑ	2.2 ½W	carbon (nonflammable)
R901	1-244-851-00	Ⓐ	120 ½W	carbon

Note: The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
RV001–008	1-226-245-00	Ⓒ Variable, CHANNEL SELECT
⇒RV201	1-224-644-XX	Ⓑ 4.7 k, adjustable; TU AGC
RV301	1-224-643-XX	Ⓑ 2.2 k, adjustable; U.PHASE
RV302	1-224-640-XX	Ⓑ 330, adjustable; SMB
RV303	1-224-644-XX	Ⓑ 4.7 k, adjustable; ACC
RV304	1-222-512-00	Ⓑ 10 k, adjustable; B.BKG
RV305	1-222-512-00	Ⓑ 10 k, adjustable; G.BKG
RV306	1-222-512-00	Ⓑ 10 k, adjustable; R.BKG
RV401	1-224-571-00	Ⓑ 5 k, variable; PICTURE
RV402	1-224-571-00	Ⓑ 5 k, variable; COLOR
RV403	1-224-730-00	Ⓒ 5 k, variable; BRIGHTNESS
RV404	1-224-555-00	Ⓑ 50 k-D, variable; TONE
RV501	1-223-102-00	Ⓑ 120, adjustable; H.CENT
RV551	1-224-972-00	Ⓑ 20 k, variable; V.HOLD
RV552	1-226-217-00	Ⓑ 22 k, adjustable; V.SIZE
RV553	1-224-641-XX	Ⓑ 470, adjustable; V.LIN
RV554	1-221-970-XX	Ⓑ 500, adjustable; V.CENT
RV581	1-224-644-XX	Ⓑ 4.7 k, adjustable; PIN AMP
RV601	1-224-643-XX	Ⓑ 2.2 k, adjustable; 105 V ADJ
RV701	1-224-640-XX	Ⓑ 330, adjustable; G.DRIVE
RV702	1-224-640-XX	Ⓑ 330, adjustable; B.DRIVE
RV751	1-226-114-00	Ⓒ 2.2 M, adjustable; SCRN
RV752	1-226-114-00	Ⓒ 2.2 M, adjustable; FOCUS

MISCELLANEOUS

CR001,002	1-231-394-00	Ⓑ Encapsulated Component, CR
DC801	⚠1-226-271-00	Ⓛ High-voltage Resistor Block
F601	⚠1-532-237-00	Ⓑ Fuse, 3.15 AT
J901A,B	1-507-372-00	Ⓑ Jack, earphone
S001–008	1-552-339-00	Ⓑ Switch, slide; BAND SELECT
S401	1-516-473-XX	Ⓒ Switch, slide; AFT
S402	1-516-473-XX	Ⓒ Switch, slide; LUMISPONDER
S901	⚠1-552-588-00	Ⓕ Switch, pushbutton; POWER
S902	1-516-866-00	Ⓒ Switch, pushbutton; SOUND UP
S903	1-516-866-00	Ⓒ Switch, pushbutton; SOUND DOWN
SG501 SG751–756	1-519-063-XX	Ⓑ Spark Gap
SP901	1-502-758-00	Ⓖ Speaker, 8 Ω
V901	⚠8-738-502-05	Ⓩ Picture Tube, 470KXB22
X301	1-527-274-00	Ⓖ Crystal
	1-452-032-00	Ⓐ Magnet, disk; 10 mm dia.
	1-452-060-21	Ⓑ Magnet, BMC
	1-452-094-00	Ⓑ Magnet, rotatable disk; 15 mm dia.
	1-519-154-00	Ⓑ Lamp, neon; included in Lumisponder Ass'y
	1-526-086-XX	Ⓑ Socket, picture tube
	⚠1-534-817-XX	Ⓓ Cord, power
	⚠1-536-473-00	Ⓘ Terminal, antenna

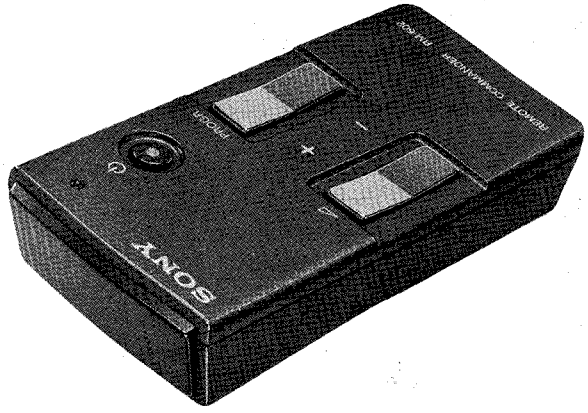
⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

PACKING MATERIALS AND ACCESSORIES

Part No.	Description
A-1470-261-A	Ⓝ Remote Commander (RM-602)
1-504-034-72	Ⓒ Earphone (ME-20E)
3-701-352-00	Ⓐ Bag, polyethylene
4-332-336-00	Ⓙ Carton
4-332-337-00	Ⓑ Sheet, protection
4-332-432-00	Ⓒ Cushion, left; lower
4-332-433-00	Ⓒ Cushion, right; lower
4-332-434-00	Ⓒ Cushion, left; upper
4-332-435-00	Ⓒ Cushion, right; upper
4-491-320-11	Ⓑ Manual, instruction; norwegian (Norway model)
4-495-764-11	Ⓑ Manual, instruction

RM-602



REMOTE COMMANDER

SPECIFICATIONS

Remote
Control System: Infrared control

Power
Requirements: 3V dc
Two batteries size AA
(IEC Designation R6)

Dimensions: Approx.
135(w) x 63(h) x 30(d) mm
$5\frac{3}{8}$ (w) x $2\frac{1}{2}$ (h) x $1\frac{1}{4}$ (d) inches
Including projecting parts and controls

Weight: Approx. 140g (5 oz) including batteries

Accessories
Supplied: Battery size AA
(IEC Designation R6)

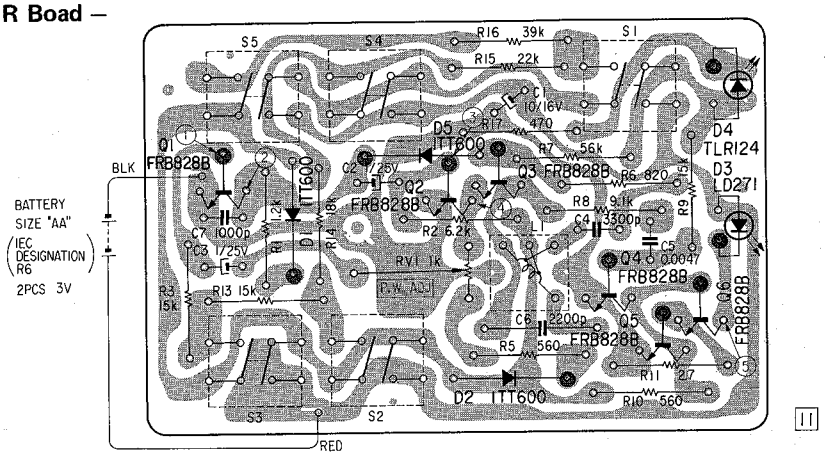
R

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼ W unless otherwise noted. kΩ: 1000 Ω; MΩ: 1000 kΩ
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 20,000-ohm-per-volt VOM.
- Voltage variations may be noted due to normal production tolerances.
- Circled numbers (① to ⑤) indicate wafeforms.

1. MOUNTING DIAGRAM

– Conductor Side –

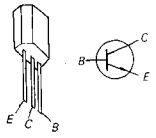
– R Boad –



· Voltages in below table are taken with each button pushed.

		⏻ S1 (POWER)	S2 (VOLUME up) +	S3 (VOLUME Down) −	PROGRAMME+ S4 (up)	PROGRAMME− S5 (down)
Q1	B	0.38V	0.18V	0.24V	0.3V	0.26V
	C	2.2V	1.8V	1.2V	2V	2.3V
Q2	B	0.5V	0.3V	0.2V	0.4V	0.5V
	C	0.3V	0.5V	0.8V	0.3V	0.2V
Q3	B	0.47V	0.47V	0.47V	0.47V	0.47V
	E	0.3V	0.5V	0.8V	0.3V	0.2V
	C	3V	3V	3V	3V	3V
Q4	B	0.4V	0.4V	0.4V	0.4V	0.4V
	C	0.44V	0.39V	0.34V	0.42V	0.45V
Q5	B	0.12V	0.1V	0.08V	0.12V	0.13V
	C	0.44V	0.39V	0.34V	0.42V	0.45V
Q6	B	0.44V	0.39V	0.34V	0.42V	0.45V
	E	0.12V	0.1V	0.08V	0.12V	0.13V
	C	2V	2V	2V	2V	2V

2SC634A



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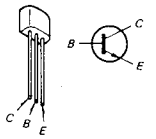
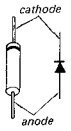
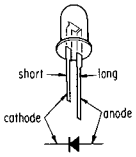


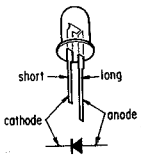
1S1555
1TT600



LD271



SR105D



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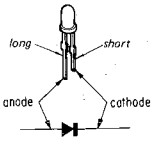
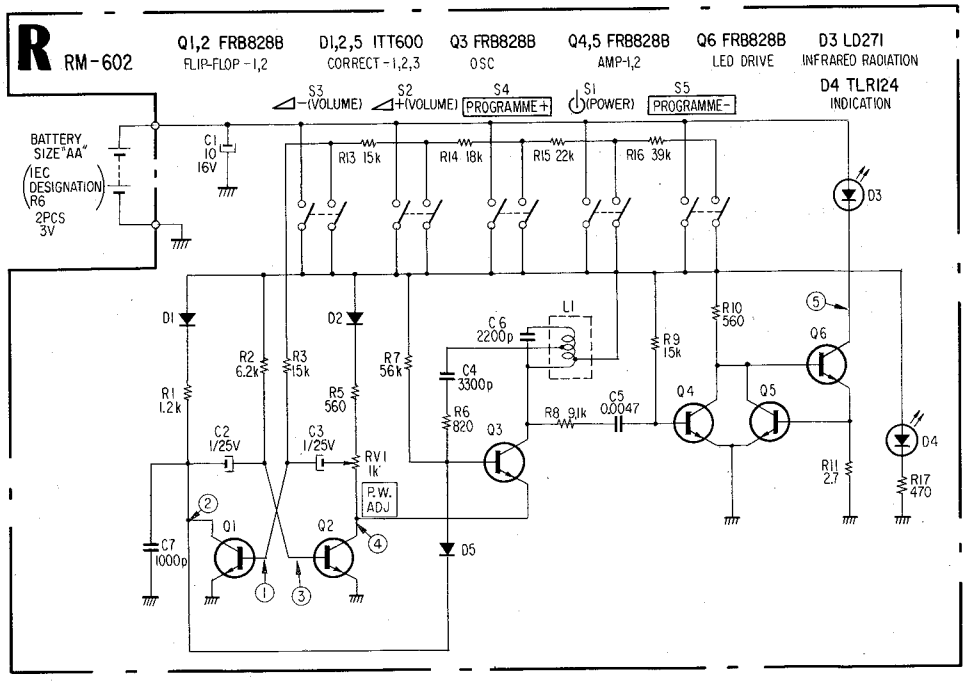
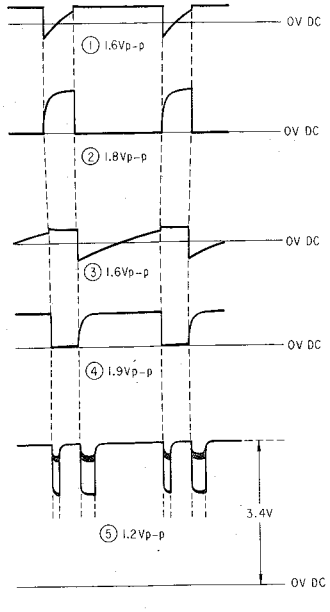


2. SCHEMATIC DIAGRAM

– R Board –

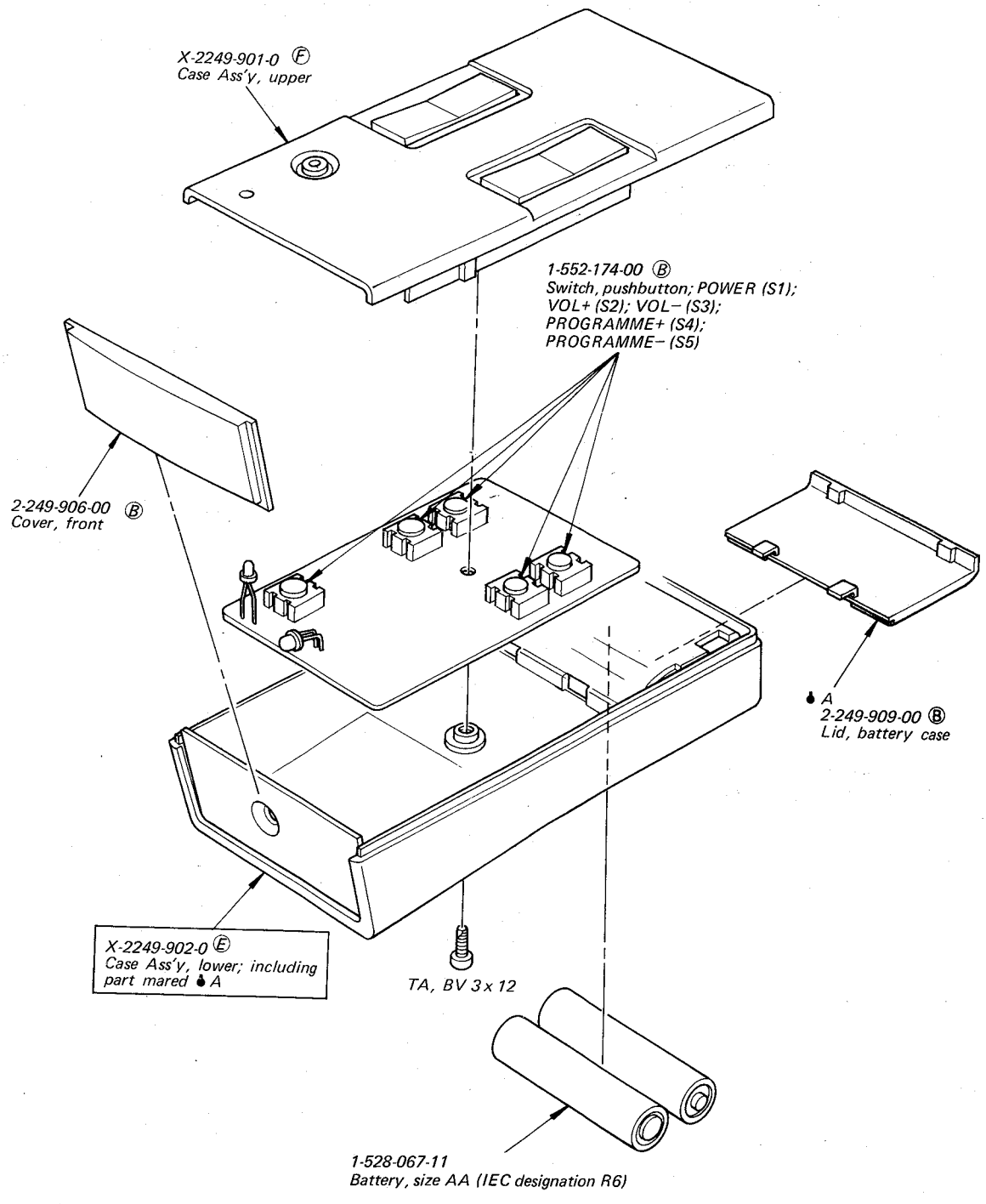




A B C

1 2 3 4 5

3. EXPLODED VIEW



- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted
  (–) = slotted head

4. ELECTRICAL PARTS LIST

Ref. No.	*Part No.*	*Description*
		SEMICONDUCTORS
⇒Q1–6		Ⓑ Transistor, 2SC634A
⇒D1, 2		Ⓑ Diode, 1S1555
⇒D3		Ⓓ Diode, LD271
D4		Ⓑ Diode, TLR124
⇒D5		Ⓑ Diode, 1S1555
		COIL
L1	1-405-770-00	Ⓑ OSC
		CAPACITORS
C1	1-121-651-11	Ⓐ 10μF 16V electrolytic
C2, 3	1-131-236-11	Ⓑ 1μF 25V tantalum
C4	1-161-179-51	Ⓐ 0.0033μF 25V ceramic (semiconductor)
C5	1-161-181-11	Ⓐ 0.0047μF 25V ceramic (semiconductor)
C6	1-103-733-11	Ⓐ 2200pF 50V styrol
C7	1-161-173-11	Ⓐ 0.001μF 25V ceramic (semiconductor)

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref. No.	*Part No.*	*Description*
		RESISTORS
		Common ¼W carbon resistors are omitted. Refer to the list on page 18 for their part numbers.
RV1	1-224-642-XX	Ⓑ 1kΩ-B, adjustable; PW ADJ
		MISCELLANEOUS
S1	1-552-174-00	Ⓑ Switch, pushbutton; POWER
S2	1-552-174-00	Ⓑ Switch, pushbutton; VOL +
S3	1-552-174-00	Ⓑ Switch, pushbutton; VOL –
S4	1-552-174-00	Ⓑ Switch, pushbutton; PROGRAMME +
S5	1-552-174-00	Ⓑ Switch, pushbutton; PROGRAMME –
	1-528-067-11	Battey, size AA (IEC designation R6)

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